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27 February 1985

USSR REPORT

MILITARY AFFAIRS

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ARMED FORCES

PREPARING FOR FEBRUARY SUPREME SOVIET ELECTIONS

Moscow KRASNAYA ZVEZDA in Russian 18 Dec 84 p 2

[Editorial: "Unremitting Attention To Preparing For The Elections"]

[Excerpt] The question of political agency and party organization work in preparing and conducting union and autonomous republic Supreme Soviet and local soviets of peoples' deputies elections set for 24 February 1985 is being reviewed in the Main Political Directorate of the Army and Navy.

It has been noted that previous elections were a huge socio-political event with important significance for further strengthening popular power in our country and for improving the work of all links in state control. These elections must take place with the practical resolution of the missions assigned by the April (1984) CPSU Central Committee Plenum and by CPSU Central Committee General Secretary and USSR Supreme Soviet Presidium Chairman Comrade K.U. Chernenko in developing all aspects of the activities by supreme and local organs of power. The election campaign is urged to increase Soviet peoples' labor and social activity in their struggle to strengthen the economic and defensive might of the Motherland even more, to convincingly demonstrate the inviolable unity of the party and the people, the monolithic character of our society and the durability of the Soviet state.

The preparation and conduct of the elections are creating major and crucial missions for military soviets, political agencies and party organizations. In the future they will be developing and carrying out organizational and propaganda measures which will guarantee that the election campaign will be conducted on a high organizational and ideological-political level and in strict conformity with constitutional statutes and the laws for union and autonomous republic Supreme Soviet elections. We proposed discussing the practical missions associated with preparing and holding elections in political agencies and in party, professional union and Komsomol organizations and in meetings with party and propaganda activists.

We must use the pre-election campaign to further rally personnel around the CPSU and the Soviet government, to mobilize servicemen, workers and employees to fulfill the decisions of the 26th Party Congress, the October (1984) CPSU Central Committee Plenum, the recommendations and conclusions contained in CPSU Central Committee General Secretary and USSR Supreme Soviet Presidium

Chairman Comrade K.U. Chernenko's speech at the 15 November (1984) CPSU Central Committee Politburo session and the laws adopted by the Second Session of the 11th USSR Supreme Soviet Convocation. All pre-election work be closely related to resolving missions assigned by the USSR Ministry of Defense for the new training year, with increasing military preparedness and with strengthening organization and discipline.

It was stressed that military soviets, commanders, political agencies and party organizations must closely coordinate all of their pre-election work with local party and soviet agencies.

Just as before, servicemen will be represented in the union and autonomous Supreme Soviets and in the local soviets of peoples' deputies. They will fulfill honorable and crucial duties and it is important to create conditions everywhere so that the most worthy Armed Forces representatives, those people who enjoy authority and support in military and labor collectives and among voters, are named candidates for the deputyships. In the course of this work, we must clearly listen to the opinion of social organizations, to the voice of the voters and we must create conditions at pre-election that will allow the free and thorough discussion of the candidacy, political, business and moral qualities of candidates for the deputy positions.

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ARMED FORCES

EDITORIAL CALLS FOR IMPROVED OFFICER SELECTION, TRAINING

Moscow KRASNAYA ZVEZDA in Russian 18 Dec 84 p 1

[Editorial: "Improving Work With Cadres"]

[Text] Lieutenant Colonel S. Kondrat'yev enjoys deserved authority among the troops of the Transcaucasus Military District. A politically mature, professionally trained, demanding and thoughtful officer, several years ago he was named as commander of an outstanding motorized rifle regiment. The young commander joined in the work energetically and knew his business. His high personal responsibility and capacity for work, his ability to rely on deputies and on the party and Komsomol organizations and to make subordinates strictly responsible guaranteed success. Recently Lieutenant Colonel Kondrat'ye was transferred to a higher position.

And this is but one of the numerous examples which show that with the correct selection of cadre personnel, high combat readiness is guaranteed in units and ships and people display their capabilities and grow politically and professionally. Realizing the decisions of the 26th Party Congress and the latest CPSU Central Committee Plenums, military soviets, commanders and political and cadre agencies are doing a lot of work to improve the selection, placement and indoctrination of cadre.

The Soviet Army and Navy are staffed with highly qualified commanders, political workers, military engineers and technicians who are totally devoted to the party and the Motherland. More than 90 percent of them are communists and Komsomol members and three-fourths of them have a higher military and military specialty education. Officers, generals and admirals successfully resolve missions to provide high military readiness in the troops and forces of the navy and to organize the training and indoctrination of personnel.

However, all of this is no reason for complacency. As noted at a meeting of the CPSU Central Committee which discussed Comrade K.U. Chernenko's recommendations on several issues of contemporary cadre policy, the novelty and complexity of the missions resolved in the process of improving the development of socialism and the increased level of the Soviet peoples'

education and culture is making increased demands on the cadre and on their business and moral make-up. And this applies to a full degree to the officer corps and to their work in the training, placement and political and military indoctrination of the military cadre.

Cadre issues in the Belorussian Military District, the Moscow PVO [Air Defense] District and in the Baltic Fleet are resolved in a business-like manner and are thought out and planned. At the foundation of the style and methods of the work by commanders and the political and cadre agencies lies a comprehensive party approach, the careful teaching of officers in the practical work in troops and their selection and placement according to their political and business qualities. They are concerned about the creation of a reserve for advancement and they train officers for service in their new positions in a well thought-out manner.

At the same time there are still important shortcomings in the work with military cadre. For example, in the Transbaykal Military District and in the Northern Fleet some commanders participate in a poor fashion in the political and military education of subordinate officers and do not conduct daily individual work with them. At times they are hasty and rash in advancing officers there.

In a number of units, formations, and military training institutes cadre are selected by patronship, relationships and by their native country. At times, as a result of the poor training in political, business and moral qualities and superficial and biased references, officers who have allowed serious errors in managing military and political training and in strengthening military discipline and those who are inclined to conceit and swaggering are advanced to senior positions.

The moral make-up of an officer is very significant. Subordinates model themselves after officers and learn the unity of word and deed and their whole work style from them. However it is no secret that in the military environment one still meets people who manifest a lack of self-discipline, those who have the ability to hide their shortcomings in work with excuses, who resort to eyewash and who misuse their service position. This happens because the guilty ones are not always held responsible to the fullest degree. There are many officers who have not served in party organizations and senior political agencies for years and who are in essence beyond criticism. At times these officers are on the lists for advancement and it is impossible to reconcile oneself to this.

A strict approach to cadres is incompatible with preconceptions and an overcautious attitude. Meanwhile at times people are biased against the advancement of some officers, and especially junior officers, and they forget that the main standard here is political maturity, knowledge of their business and a heightened feeling of responsibility. At every level there must be young, prospective officers along with the tested cadres.

We must constantly improve the system for training and increasing the qualifications of the officer corps in military training institutions, in courses and also in the system of planned command training with troops.

Improving political, operational-tactical, military technical and special training and reinforcing the practical trend in training and the rapprochement between the levels of knowledge and practical skills of officers with a command and engineering profile must get special attention. Teaching the command cadre to resolve combat missions and to be victorious over a strong, technically equipped enemy is one of our most vital missions. We must inculcate officers with the ability to work with people, the knowledge of the basics of military pedagogy and psychology, the skills to unite the military collective and conviction in its strict regulatory order. The main thing here is painstaking individual work with every officer and concern for his successful development.

Practice shows that successes are best where the cadre remains stable. Unfortunately, there are also examples where an individual is unable to get his bearing and understand his new responsibilities and he is transferred. We must set things up so that an officer reveals himself to a sufficient degree in each duty position and gains experience and new knowledge. Of course, while doing this we must not allow the cadre to stagnate nor hold back those worthy of advancement.

The officer cadre is the golden reserve of our Armed Forces. Improving work with them and resolving their training, indoctrination and placement issues in a party fashion signifies concern for increasing the effectiveness of the training-indoctrinational process in the Army and Navy, reinforcing the combat readiness of units and ships and strengthening the might of the Armed Forces.

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ARMED FORCES

DEFICIENCIES, FORMALISM IN KOMSOMOL WORK ASSAILED

Moscow ZNAMENOSETS in Russian No 9, Sep 84 (signed to press 24 Aug 84) pp 2-3

[Editorial: "Party Concern for the Komsomol"]

[Text] The heroic biography of the Leninist Komsomol is rich with outstanding achievements for the welfare of our socialist Motherland. Worthily fulfilling its role of a reliable reserve and an active helper to the CPSU, the Komsomol is actively continuing the affairs of the older generation.

The Komsomol owes all its successes to the wise leadership of the Communist Party which in a fatherly manner is caring and attentively indoctrinating and aiming youth and teaching them to practically realize Leninist precepts. The 26th Party Congress and subsequent CPSU Central Committee plenums have had and continue to have an exceptionally beneficial influence on Komsomol organizations.

The recently adopted CPSU Central Committee resolution on "Further Improving Party Leadership Of The Komsomol And Increasing Its Role In The Communist Indoctrination Of Youth" is a new, sharp manifestation of party concern for Komsomols. In highly evaluating the worth of young men and women's daily affairs in all aspects of communist development, the CPSU Central Committee is concentrating its attention on urgent missions both in party leadership of the Komsomol and in the activities of Komsomol organizations.

These missions are dictated by the complex contemporary international situation, the sharp increase in confrontation between the world's two systems and the rising generation's increased responsibility for the socialist Fatherland's further prosperity and increased might. As Comrade K.U. Chernenko noted in his speech to the All-Union Conference of Komsomol Organization Secretaries, "In developing plans for the next five-year plan and right up to the beginning of the next century, to a significant degree we are counting primarily on the manual skills, daring ideas and labor conscience of today's young people".

The Red Banner Army Komsomol, inspired by the Motherland's high rewards, is making a notable contribution to completing missions assigned by the USSR Ministry of Defense to further increase vigilance and combat readiness in the forces and to strengthen military discipline and law and order. Numerous

examples of courage and military valour displayed by soldiers during training in the GDR [German Democratic Republic], PNR [Polish People's Republic] and CSSR [Czechoslovak Socialist Republic] and also in the southern Baltic Sea under the leadership of USSR Minister of Defense Marshal of the Soviet Union D.F. Ustinov testify to this fact. Also the daily intense summer training serves to confirm this.

Komsomol organizations headed by Warrant Officers V. Kuznetsov, Yu. Belyakov and D.Yakoshevskiy used their initiative to make many contributions.

Their experience shows that there are always successes when the flashy aspect of Komsomol work is not the predominant inclination. What should be predominant is sincere Komsomol concern for indoctrinating Army youth, individual work with each serviceman, lively work as a follow-up to their call-up and service beginning and organizational and indoctrinational work towards attaining high final training results and discipline.

Unfortunately there are still many Komsomol committees and bureaus and many regular workers that still lack the spark and fervor. And deficiencies noted in the CPSU Central Committee resolution totally apply to Army and Navy Komsomol organizations.

Under army conditions these deficiencies are manifested in a negligent attitude which a definite number of Komsomol members have toward training, service, upkeep of the weapons and equipment entrusted to them and the fulfillment of combined arms regulations requirements.

The reasons for such negative displays can be found in the serious deficiencies and formalism in various Komsomol organizations' work. For example, the activities of the Komsomol organization headed by Warrant Officer A. Novikov have such flaws. The secretary himself is distant from young people, from their daily affairs and concerns. His style lacks the vivacity that would draw him to young people. The hustle of general, often flashy measures, superficiality, amassing facts and figures and giving orders pull him away from daily work in subunits. Komsomol members are constantly in the field, at the firing range and the tank park, but the secretary remains in his office. Komsomol members are happy or sad, need help and advice, but the secretary is deaf to everyone because he does not know the daily internal life of the Komsomol collective and is not very interested in it.

And this is not the only Komsomol collective that is slow in improving its style and methods of working with young people, that is adhering to worn out methods and is not picking up on the new processes that have perked up the interest and needs of young soldiers. Although they have a large arsenal of methods, many Komsomol leaders are not using them to their fullest to impart the necessary direction to young peoples' tireless energy and initiative.

Life is convincingly showing us that there are significantly fewer deficiencies in organizations when they have a high degree of party leadership over the Komsomol, where party committees and bureaus are not involved from event to event, but instead stay deeply involved in Komsomol needs and wants on a daily basis, provide a wide area for their initiatives and at the same

time, note deficiencies in a timely manner, keep the Komsomol from making mistakes and "valy" in work and working for more than just check marks in the training plan.

This is how the absolute majority of party committees and bureaus and communist activists operate and they derive great authority among young people from this. Their personal example and lively participation in youthful affairs imparts the same activity and sincere enthusiasm to the Komsomol that has always distinguished them. However, one still meets party leaders and communists, including activists, who, as the saying goes, have no time for Komsomol work. They have no objections to correcting a Komsomol committee from time to time, but they themselves rarely visit subunit Komsomol organizations to help them on location, to teach the Komagruporg (Komsomol group organization) and the secretary, give him sensible advice on time and meet with young soldiers in a free and easy situation.

For example, these deficiencies have been noted in the activities of the party committee where Major S. Minenok a member. During the last training session many Komsomol members did not prove their worth in operations, displayed weak marksmanship and driving training and operated listlessly and indecisively. And this was not by chance. The party committee had not noticed that the Komsomol committee and several subunit Komsomol organizations had slackened their attention on the motorized riflemen's tactical-firing training. These same organizations has also become formalistic in developing missions and norms and had lessened their exactingness on Komsomol members setting personal examples in training and discipline.

In addition to the inattention to young peoples' daily needs, there are still many examples of meaningless trusteeships, excessive organization and unnecessary regulations which deprive Komsomol members of initiative and reduce their feeling of responsibility for the business assigned to them.

There are still many party organizations that don't get involved in training and indoctrinating Komsomol activists, in teaching the various aspects of Komsomol work and in summarizing and actively inculcating foremost experience in a business-like manner.

Now work on the practical completion of the CPSU Central Committee resolution "Further Improvement of Party Leadership Of The Komsomol And Its Increased Role in Communist Indoctrination of Youth" has started and is expanding every day.

In accordance with instructions from the USSR Minister of Defense and the Chief of the Army and Navy Main Political Directorate, missions originating from this CPSU Central Committee resolution and measures for improving party leadership of the Komsomol are being discussed at political organizations and at party activist and local party organization meetings. Measures for realizing the CPSU Central Committee resolution and the course for completing recommendations from the All-Army Conference of Komsomol Organization Secretaries are being examined at assemblies, exercises and seminars of major unit, unit and ship leadership personnel and with various categories of commanders and political workers, party and Komsomol activists.

The duty of commanders, political agencies and party organizations is to examine in a specific and businesslike manner the completion of every measure of all vital missions contained in the CPSU Central Committee resolution and to give them major party significance.

We must thoroughly analyze and fundamentally and in the spirit of criticism and self-criticism evaluate existing deficiencies in both the party's leadership of the Komsomol and in the Komsomol organizations' indoctrination of young people. We must also develop practical steps for unconditionally completing the demands of the CPSU Central Committee and the orders of CPSU Central Committee General Secretary Comrade K.U. Chernenko as contained in his addresses to the February and April 1984 CPSU Central Committee Plenums and to the All-Army Conference of Komsomol Organization Secretaries.

As the experience of the first party meetings is showing, there are places where we find attempts to conduct these discussions in a hasty manner and to adopt sloganistic decisions. Yet the main reason for improving party leadership over the Komsomol is to improve these work forms and methods more persistently, keeping in mind that this must be planned and systematic, must include plans for the future and all measures must include the peculiarities and realities of specific categories of military servicemen and missions that they complete.

We must review measures designed to help commanders develop the ability to rely on Komsomol organizations to resolve missions associated with further increasing vigilance, combat readiness, the quality of military and political training and in strengthening military discipline.

The practical accomplishment of party demands for constant personal contact between communist-leaders and young soldiers and for more active participation by the leadership cadre and all communists in young peoples' communist indoctrination deserve special attention.

And we must more persistently improve the practice of holding open party meetings by attracting Komsomol members and young people to them. We should also be concerned about strengthening the party nucleus in the Komsomol.

We must thoroughly review the existing system of party committee and buro work to increase responsibilities of communists in working with the Komsomol and also review the instruction of CPSU members and candidate-members chosen in Komsomol agencies and the demands on them to complete this party commission.

As Comrade K.U. Chernenko indicates, in leading the Komsomol "everything must be done with all possible tact. The style of party leadership over the youth organization demands maximum persuasion, comradely attention and practical help."

Because this CPSU Central Committee resolution has come to light, we will soon discuss missions created by it at meetings of Komsomol activists and all local Komsomol organizations and will organize a thorough study of CPSU Central Committee resolution requirements with Komsomol activists..

In doing this, we must concentrate all our attention on increasing Komsomol organization contributions to resolving specific missions of training and indoctrinating young soldiers, further developing socialist competition and providing personal examples of Komsomol members in military training and in the art of mastering equipment and weapons.

We must insure that Komsomol organizations actively indoctrinate all soldiers with a feeling of love for military work and an irreconcilability with laxity, mismanagement, laziness and military discipline violations.

The persistent improvement of work styles, forms and methods in Komsomol organizations must be a matter of special concern. In this matter, political and party organizations should proceed from the instructions of Comrade K.U. Chernenko, on the one hand, to increase the organization, order and discipline in the Komsomol ranks and, on the other hand, to develop the initiative, creativity and activity of Komsomol members. We must persistently eliminate formalism, excessive organization and window-dressing from Komsomol organizational work and the passion for mass measures. And the main thing is that daily work directly in subunits must become defined everywhere.

While we are preparing for the 40th Anniversary of Victory, we must expand business relationships between Army and Navy Komsomols and the local Komsomol organizations and more actively help them in military-patriotic indoctrination, in propagandizing the heroic traditions of the Soviet Army and Navy and in training young people for service in the Armed Forces of the USSR.

The development and accomplishment of supplemental measures for improving the selection, indoctrination and training of Komsomol activist cadres demands special attention. Leaders of Komsomol agencies must be ideologically convinced, professionally mature leaders of young people with initiative and organizational abilities, people who understand young people and thoroughly know their needs and requirements, who respond to them sensitively and enjoy trust and authority among Komsomol members.

We should increase not only the level of meetings and seminars conducted with Komsomol cadres and activists but also decisively improve the training and individual instruction at locations which must determine the formation of Komsomol leaders, develop their constant need to be in the thick of young people, indoctrinate them with a feeling of responsibility for the affairs entrusted to them and of irreconcilability with formalism and shortcomings. We must not only teach activists and urge them improve work, as often happens, but also persuasively focus on specific examples and foremost experience, exposing it in detail.

Further strengthening the authority of Komsomol cadres and activists is very significant. In this regard, I mean most of all that commanders, chiefs and political workers at all levels must listen to their opinions and recommendations sensitively, support positive starts in military training, competition and the organization of leisure time. It is important to actively develop and inculcate the so-called "minor" duties of Komsomol members' daily affairs which, as experience shows, are a very essential and tangible

contribution to improving the quality of training and strengthening discipline.

During the development of Komsomol agencies, selection of Komsomol activists must more fully consider the multi-national composition of Komsomol organizations.

The duty of party organizations is to teach Komsomol members and young people using the example of the life and activities of great Lenin and the revolutionary, military and labor traditions of the party and people. This work must take on more and more momentum as the 40th Anniversary of the Soviet peoples' Victory in the Great Patriotic War draws near.

We must provide active participation by leading command-political personnel in indoctrination while considering the specifics of the various categories of young people, their educational levels and inclinations.

All forms of mass propaganda, political education and counter-propaganda work should be subordinated to the development of Komsomol members' and young soldiers' thorough understanding of Marxist-Leninist laws of contemporary social development, the complexity of the world's military-political situation, Soviet patriotism and socialist internationalism. We must also more actively impart to soldiers a respect for the glorious history of the Fatherland, the State coat of arms and the hymn of the Soviet Union, the USSR State Flag, unit battle streamers and must also inculcate in them an immoveable conviction in the correctness of socialist ideals.

The CPSU Central Committee resolution will be studied in the Marxist-Leninist officer training system, in Army and Navy warrant officer, service men and women's political training groups, in political exercises with soldiers and sergeants, sailors and petty officers, in the schools and seminars of the party training system, economic education and Komsomol political enlightenment and in the process of teaching social sciences to military academy cadets. It is important that we carefully prepare for this in advance so that we thoroughly bring to personnel the complete, enormous concept of the missions contained in the CPSU Central Committee resolution and at the same time work out the practical measures for fulfilling the resolution. We must actively use agitation-propaganda and lectures in this work.

We should stress having communists explain the CPSU Central Committee resolution and the direction of special propaganda groups in garrisons.

As the CPSU Central Committee resolution is stressing, indispensable fulfillment of the Leninist order "Teach military affairs in a realistic fashion", as before, must be the core of all Army Komsomol work. The duty of commanders, political agencies and party organizations is to provide maximum aid to Komsomol organizations in this mission.

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ARMED FORCES

WARRANT OFFICER PROMOTION DISCREPANCIES DISCUSSED

Moscow ZNAMENOSSETS in Russian No 9, Sep 84 (signed to press 24 Aug 84) p 9

[Article by Major A. Kupryashin, ZNAMENOSSETS correspondent: "Worthy Of The Next Rank"]

[Text] After a difficult march the battalion formed up for a critique. Major N. Shein noted the outstanding points, gave the soldiers their missions and after taking brand new shoulder boards out of his field pack, he gave the order, "Warrant Officer Golovatiy, three paces forward".

And when the warrant officer had completed this order, the major added, "By order of the district troop commander you are awarded the next military rank, 'Senior Warrant officer'".

The officer's last words were drowned out by applause. The loudest of all to express happiness for the platoon leader were his subordinates. After the command "Fall Out", Golovatiy was surrounded by a thick circle of people. Officers and warrant officers came up and congratulated him and you can understand the state of Senior Warrant Officer Ya. Golovatiy, his embarrassment and his pride.

This episode came to me when I read the letter which Warrant Officer N. Yegorov sent to the editor. "All of the many warrant officers in our unit have served more than 10 years, but those so authorized have not yet received a promotion to the next rank."

The letter contained so much resentment and bewilderment that the editor felt it necessary to send a correspondent to that Red Banner Baltic Military District unit.

These details came out in conversations with officers in that unit. For several years there has been a statute whereby the military rank of "Senior Praporshchik" and "Senior Michman" ["senior" Army and Navy warrant officer respectively] is awarded to warrant officers who have faultlessly served in their rank for five and more years, at least one of which is in a position indicated on the List or in a position designated to bring officer strengths up to the authorized level. But this situation has not prompted several officers here into action.

After explaining that he held no grudge against Warrant Officer N. Yegorov, his immediate chief, Captain V. Popikov, spoke about his subordinate in a complimentary manner. Warrant Officer Yegorov's platoon has successfully completed its duties for several years and is a leader in socialist competition. And he explained the reason for the letter to the editor in this way. First, no one had told him that he had to prepare a promotion packet for the warrant officer and second, he had never run into this situation before.

And he prepared his "decisive" argument for the end. "And you understand that he doesn't have many subordinates in his platoon. At times I wonder why he should be promoted."

Unfortunately this attitude applied to other warrant officers in this unit. For example, Captain V. Grishanin explains the fact that there is still no promotion packet for Warrant Officer A. Agibayev, the commander of the foremost platoon and a specialist with high classifications, in this way.

"We can't give him everything immediately. He was awarded a medal 'For Excellence In Military Service' recently."

And it never occurred to Comrade Grishanin that awarding him a medal (this had taken place two years earlier) and promoting him were two entirely different things.

Presenting a subordinate the next military rank is not so much a commander's right as it is his direct duty. Promotion is determined by the sequence of military service and is reinforced in the USSR Law Of General Military Duty. If such requirements as the length of military service, conformity between the position held and the new rank and a positive report are met, the commander must make a decision.

There are certainly cases where the subordinate does not deserve the next military rank, but then the reason for holding him back must be explained and a time limit for eliminating the shortcomings must be established.

By the way, the decision to hold the next military rank back from an Army or Navy warrant officer cannot be made by just any commander. Only a regimental commander (or his equivalent) or higher can make this decision. This statute is based on many years of experience and is imbued with concern for cadre growth. By handing the fate of a subordinate to commanders made wiser by experience, the law protects junior officers, ie. those less experienced comrades, from making hasty decisions in such a responsible matter. A thoughtful commander also tries to use the moment for awarding the next military rank so as to most effectively reach indoctrinational goals.

Unfortunately, one has to face facts that convincingly show that for some commanders, regulatory norms are not obligations.

Some Comrades show unnecessary "initiative" and often add their own criteria, such as an Army or Navy warrant officer must have a medal "For Excellence In Military Service". Others feel that a warrant officer must have the military

qualification of "Master". You also see such a questionable "educational measure" as "you give us an excellent on an inspection and we will give you your 'stars'" which is a situation unforeseen in the regulation. Some staff workers refer to supposed "limits" and "mission vouchers" and here we should also add that documents frequently are completed incorrectly. Packets are returned to the unit because of inaccuracies and months pass while things are cleared up. And people wait and become resentful and indifferent to their service because of the inattention and negligence of officials.

People in the unit where Warrant Officer G. Mynsoedov (who is now already a senior warrant officer) is the company sergeant major came up with their own "innovation". As Grigoriy Afanas'yevich reported to ZNAMENOSETS, a packet was prepared for him five times, but with no result. The editor sent his letter to the Directorate of Cadre for the Order of Lenin Moscow PVO [Air Defense] District.

Colonel B. Chetverikov explained that despite the requirements of the source document, in that unit it wasn't the commander who decided whether it was advisable to award the next rank to the warrant officer. This was being done by a council of warrant officers.

It is apparent that the appropriate people here did not have the big picture of the party's approach to working with cadre and they themselves didn't maintain a study of the appropriate documents.

The establishment of the military ranks "Senior Praporshchik" and "Senior Michman" is a new manifestation of the Communist Party and Soviet Government's concern for the Motherland's armed defenders. Everyone must understand this and must not invent and artificially set up obstacles for those who are deserving of these ranks.

At a meeting with military academy graduates CPSU Central Committee member and USSR Minister of Defense Marshal of the Soviet Union D.F. Ustinov said, "Working with people... is a major art, a complicated and responsible business. Leading a military collective is more than just commanding subordinates and giving them orders. It also means systematically and individually educating personnel politically, militarily and morally. It means comprehensively knowing the qualities, interests and needs of each of your personnel, trusting people and respecting their dignity."

These requirements must not be forgotten.

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ARMED FORCES

TRET'YAK: TRAINING COMMAND CADRES -- PROBLEMS, PROSPECTS

Moscow KOMMUNIST VOORUZHENNYKH SIL in Russian No 22, Nov 84 (signed to press 5 Nov 84) pp 31-38

[Article by General of the Army N. Tret'yak: "Command Maturity Is Tested In Battle"]

[Text] The 40th anniversary of the Soviet peoples victory in the Great Patriotic War is nearing. Time is moving us further and further from that terrible time of battles with the enemies of the socialist Motherland and that glorious day which proclaimed to the whole world the victorious end to the bloodiest and fiercest war in the history of the ages. But our memory does not depend on time. Rather, memory clearly illuminates the front line episodes and fills our hearts with pride over the great feat accomplished by the Soviet peoples and with the behest to reflect on the fiery path traveled.

I look closely at my own front line youth and remember the rigorous years when I had to command a company, battalion and a rifle regiment. My colleague-brother soldiers, officers, sergeants and soldiers pass before my eyes. These were true friends and brave soldiers who stood with pride on the path of the cruel, insidious enemy and totally routed him. The Soviet people proved to the whole world that the army of the socialist government is invincible and that the country of the Great October, the motherland of Lenin, cannot be broken and forced to its knees, nor bound to anyone's will.

What a shame it is that this indisputable truth is not reaching the consciousness of the newly appearing pretenders to world supremacy. US imperialism is taking a course toward an unrestrained arms race, an unprecedented aggravation of the international situation and a change in strategic military equality in their favor.

It is understandable that under the conditions of increasing military danger, the threat of nuclear attack and the very sharp ideological battle, our party, the state and our people have to manifest constant concern for strengthening the defensive capability of the country. As Comrade K.U. Chernenko stressed at the April (1984) CPSU Central Committee Plenum, "The current situation requires that we constantly and comprehensively work to guarantee the security of the country and a reliable defense for the peaceful labor of Soviet peoples."

Determining the enormous importance of the mission to further improve the battle readiness of the Armed Forces, we military people naturally turn to the experience of the Great Patriotic War, creatively interpret it and try to put it into practice in accordance with the character and peculiarities of contemporary battle.

The past war convincingly showed how important it is to have a well trained command cadre. Thus, in the most critical minutes of battle, people display unusual strength of will and attain victory over the enemy often primarily thanks to the commanders' steadfastness, bravery, resourcefulness and decisiveness. The will and self-control of a leader rallies people, his bravery and sensible mind inspires soldiers, and a commander's wholehearted devotion to the Motherland, honesty and fairness inspires in people the love, respect and trust in him. And these are the primarily qualities that testify to the command maturity of any officer and to his ability to honorably resolve any, and even the most complicated, missions.

I remember my own regimental commander, Lieutenant Colonel M. Frolov. He was a brave, strong-willed officer who was able to rally people and inspire them to decisive actions and who under battle conditions showed a clarity of purpose, persistence and initiative. He had really mastered enemy tactics and could counter it with the most perfect tactical methods and means. He didn't become flustered in difficult, and at times critical battle situations, but quickly analyzed the situation at hand, applied well-founded decisions and carried them to completion. The commander put his most serious attention on careful, comprehensive preparation for battle, rightly considering this an important item for victory over the enemy. During the course of this preparation he perfected his tactical knowledge and taught his subordinate commanders to organize a battle, show depth and boldness in tactical thought, self-reliance and firmness in controlling the subunits entrusted to them.

While preparing to break through the hostile defense under the code name "Panther" and to capture the Dukhnovo stronghold, for two weeks we developed the upcoming operation with the personnel, scrutinized our maneuvers, played it out on topographical maps, on sand tables and on the terrain. Later, in battle, we had to supplement and improve our tactics under hostile fire. And all of the skills that we gained by the loss of battle variations were the basis for the successes we achieved.

I can give many examples of excellent command maturity among the officers in our division.

The ski battalion commanded by Captain N. Kostyrev successfully completed its mission of capturing the tactically important settlement of Lyskino. The battalion commander relied on suddenness and boldness and was not in error. The ski soldiers, swiftly crossing through the squall of fire, burst into the village and routed the fascists.

Battalion commander Captain F. Korik got the order to get into the enemy rear area and prevent the Hitlerites from blowing up a dam. The officer, after secretly penetrating 20 kilometers into the enemy rear area, set up an ambush

and defeated a large column. The battalion commander subsequently did not limit himself to repulsing the enemy attack, but after five hours of battle rallied his subunit to counterattack, drove the fascists into a swamp and destroyed them unit by unit.

Certainly, combat command maturity is not found in some extremely compressed time frame. Officers often reach it by a difficult, thorny path. Initially war is not managed error free and some regulatory situations that were learned do not coincide with the real situations under combat conditions. All of us, both the junior and the experienced, passed the science of war, the stern science that gave quarter to no one. But we persistently studied the art of winning. And not only in the course of this battle or another, but using any possibility and relying on the experience gained earlier.

More and more often there are bold concepts on the operational maps of commanders and staff officers: the envelopment, a flank attack, hitting the enemy in the rear area. Energetic maneuver and close subunit mutual support have become the usual thing in tactics. The enemy, being strong, was rather afraid of these "non standard" variations and our commanders, indoctrinated with the spirit of creative thought, tried to avail themselves of this enemy weakness at every possible chance.

Now, mentally looking back and studying the front line experience, I can say with firm certainty that it is important to acquire command maturity during the peaceful military days. I do not deny that maturity is also formed during the course of combat operations, but one must learn those things that are necessary in war, such as how to organize a battle and clearly control it and gain a decisive victory over the enemy, beforehand.

At his report to the All-Army Conference of Komsomol Organization Secretaries member of the CPSU Central Committee Politburo and USSR Minister of Defense Marshal of the Soviet Union D.F. Ustinov stressed, " We must learn to battle under contemporary conditions and this requires first that we know our enemy, his weapons and tactics well and skillfully organize and conduct reconnaissance. Second, that in battle we thoroughly and constantly combine powerful fire, the deep strike and sudden maneuver on land, on the water and in the air and get close mutual support of all forces and means. Third, that we firmly hold the threads of command and control of our forces and weapons in any difficult situation and with the mass electronic interference created by the enemy."

These instructions from the Minister of Defense are the basic principles in command training and in the process of establishing commanders as the organizers and authors of battle.

How does one train a commander of a unit or subunit so that he acquires the depth and boldness of tactical thought, the strong habits to skillfully organize a battle and firmly control subordinates under very difficult battle conditions?

Of course, military training institutions provided a lot of this and most of all, they provide an officer's good theoretical training. The overwhelming

majority of our military school and academy graduates come to units with a sufficient reserve of theoretical knowledge. But there is no doubt that this knowledge must be constantly improved, deepened and expanded, with special emphasis on practical skills. Command training in units is just the thing to expand the theoretical military outlook of officers, with a bias toward the practical side of training.

I know many officers in major units and regiments who strive in every possible way to get command training that is constantly conducted at a high organizational and methodological level so that vulgarizations and indulgences are reliably eliminated.

And this is exactly how people in the foremost motor rifle regiment commanded by Lieutenant Colonel S. Buzayev act. The commander and directorate and unit staff officers try to train officers in a compressed timeframe so that they possess not only boldness and decisiveness, but also an analytical mind, self-dependence, resourcefulness and initiative.

And this is the correct course. I met all kinds of commanders at the front. Many of them were real creators and battle managers. But there were also others who did not show any special activity, clarity of purpose and creativity in organizing battles and managing subordinates in battle. They made independent decisions timidly, seldom applied the diverse, most effective means for completing their military missions and did not always use the capabilities of their equipment and weapons to the fullest. These commanders and their subordinates were in difficult straits in battle and as a rule, their subunits suffered big losses.

Major problems for a commander are sluggish tactical thinking and the inability to think out the upcoming battle in detail. This is when the commander thoroughly studies the situation and develops the correct decisions, displaying ingenuity, real creativity and cunning. One must not forget that battle is not only a duel with troops but also mental competition. And often it is not the best equipped, but the smartest that wins. There is reason for the fact that we front line veterans say, "In the beginning an idea wins".

The Marxist-Leninist training of the officer corps lies at the foundation of successful command formulation. It was proved long ago that the more thoroughly a commander masters the theory of Marxism-Leninism and Marxist-Leninist methodology, the more thoroughly he gets to know the general laws of armed conflict and the nature of contemporary battle and the more intelligently he resolves his own practical missions. People in the regiment commanded by Lieutenant Colonel S. Buzayev were very conscious of this. The commander himself, political workers and the party organization put very serious attention on the quality of the officers' Marxist-Leninist training. As a rule, this whole group receives an excellent evaluation on the results of exercises.

Various methods for training are used to improve the professional skills of officers. Among them are group exercises in the field, short tactical exercises for officers, training in communications equipment and independent officer work. Naturally, tactical training and especially tactical training

with field firing, where commanders' actions during the organization and conduct of battle are most fully and thoroughly worked out against a backdrop of a complicated, sharply changing, instructive tactical situation, are the highest school for developing tactical skills.

Lieutenant Colonel Buzayev tries to train thinking officers who have initiative and who can independently make decisions. He relies heavily on the fundamental principles of Soviet military science which are to teach the troops those things that are necessary in war. Instructors in exercises and training for the officer corps are primarily concerned with creating a tactical situation in the field that could develop the tactical thinking of commanders and other responsible individuals, inculcate in them a feeling for the new, direct them to search for the most effective methods and means for conducting military operations and prompt them to show intense military activity and creatively adopt the experience of the Great Patriotic War.

This condition recreates the organization of units and subunits and the operational tactics of the probable enemy in detail. It is dynamic and saturated with sharp, non-standard situations, suddenly changing tactical movements and elements of the unexpected. All command exercises and tactical training are conducted as a rule on new, unfamiliar terrain. The enemy is designated by targets and simulators that are often specially constructed and, correspondingly, by specially trained groups

Of course, during exercises inexperienced commanders, and especially junior officers, at times allow errors in studying the "enemy" and in analyzing the situation at hand, in making decisions and putting them into operation. Of course, the easiest thing for an instructor to do is to indicate the type of error and advise them on how to eliminate it. Only when this style is used, it is difficult to develop independent actions and the habit of thinking over a situation and finding a way out of the situation without unnecessary tutelage.

Therefore people in the regiment take another route. They practice eliminating errors by presenting the next piece of advanced information that makes the situation more exact and by applying simulator means and changing the situation on the battle field. For example, a battalion commander in an offensive battle does not resolve the problem of suppressing one of the opposing side's artillery batteries. The additional exercise setting information "The enemy battery has increased its fire on the attackers" is given and this is a signal to the battalion commander that he has neglected something and has to correct it.

Here they use every possible means to encourage self-reliance and initiative shown by officers in group exercises, small tactical exercises for officers and tactical training. How? The exercise instructor immediately notes that the subunit is exploiting a success or is successfully carrying out the assigned mission or is favorably altering the tactical situation by using some other pedagogical means which shows sharp wits and resourcefulness, .

A gradual expansion of the tactical situation, and especially the intended execution of a maneuver by forces or fire, mutual support with attached or

supporting subunits, the regrouping of forces and the restoration of subunits' combat readiness is beneficial. All of this promotes the formulation of command combat maturity in officers in the best possible way.

Just as it is in that unit, command training is well organized in the Guards tank unit where Guards Lieutenant Colonel Yu. Antonov serves, in the motorized rifle battalion commanded by Lieutenant Colonel A. Desyatnik and in many other units and subunits. All the same, we will confess that the problems of improving the quality of command training have not been resolved everywhere and in some places we have not overcome oversimplifications and indulgences which lead to stereotypes, blatant sketchiness in the actions of officers and the habit of fighting, as the saying goes, by the proven method.

The most widespread deficiency is that instructors are poorly prepared for exercises in the command training system. We know that the basic document in working with training material is the instructor's operational map which recreates in detail several variations in the actions of both "warring" sides and foresees the application of sudden tactical methods, the effective use of terrain conditions to come out in the enemy's flank and rear area, the necessity of close mutual support with attached and supporting subunits and more. In short, this document must exactly and clearly embody the commander's concept and promote the thorough and comprehensive development of the theme.

And how does it actually work at times? Some commanders, not bothering to thoroughly prepare for the exercise, put a primitive tactical situation on their operational map. This does not provide food for officers' thought and does not spur them to creativity in organizing the battle or in controlling subordinates in the battle and does not allow them to show initiative. And the group exercises in the field and also tactical training for officers are conducted listlessly, in a boring manner and with simplified variations. There are no critical situations, no maneuvering...

While organizing exercises with subunit commanders, some instructors do not involve special subunits commanders. Naturally the issues of mutual support are not developed to their fullest and in detail. Should one wonder after this that mutual support is not organized well enough in such a tactical exercise?

It is very important that an instructor strives so that commanders fully develop the issues of organizing and controlling the battle. In particular, they must get practice in determining the methods of completing missions and work in precisely specifying and organizing mutual support and combat and material support in the field.

There are also cases when a commander has distinguished himself by decisiveness and boldness in battle, self-reliance in making decisions and high military activity, but the simplest question of material support leaves him stumped. For example, he cannot determine how much ammunition is required to complete the basic load, how much fuel to top-off the equipment, where and how to replenish ammunition, how to organize transportation for the wounded and how to evacuate damaged equipment, etc. And all of this is important. Without a well organized rear area and technical support it is difficult to

count on success in modern battle. Therefore, the ones who act correctly are those command exercise instructors who invite service commanders to the field with them so that in the process of developing the theme they explain to the students the military and technical supply issues and take part in the evaluation of the officers' actions with the introductory material.

Tactical training and especially training which includes field firing is the real school for formulating and improving command maturity.

I do not put the words "formulate" and "improve" side by side accidentally. For junior officers, and especially the recent military school and academy graduates, such exercises are a rich opportunity for developing the necessary command qualities and command character. And for former commanders who have already taken part many times in these critical field exercises and have studied many themes in the professional development system, these exercises allow them to improve tactical skills and master the ability to resolve more complicated missions. Of course, this is if the training is well organized and all details are thought out and the level of officer training is taken into consideration.

In this regard, I want to use Major V. Semizel'nikov, the commander of a motorized rifle battalion, as an example. Each battalion and company tactical exercise which he conducts is a real school for tactical skill for subunit officers. The battalion commander himself conscientiously prepares for the exercise both with experienced and junior officers, gives them not only knowledge but also the spirit and tries to get maximum value out of the training time. He selects unknown terrain, thinks out several interesting, instructive condition variations and complicated, non-standard military situations which require creative initiative and self-reliance from the students and he borrows from front-line experience. His "enemy" is not designated, but is active, cunning and strong.

As a consequence, the dominant atmosphere in exercises and training in Major Semizel'nikov's unit is one of creativity and a search for new ways to use methods and means of conducting battle determined by regulations and to use equipment and weapons. Officers learn to creatively resolve the diverse missions in organizing a battle and those missions that unexpectedly arise during a battle and they learn to bind the enemy to their own will. In short, they are not bored in the field. And the return from this command training is great. Even junior officers, the recent VUZ [institutions of higher education] graduates, acquire the necessary skills in a short time and act knowledgeably, decisively, with initiative and without any reproaches from their immediate superiors during exercises.

It is fully understandable that one must relate very seriously, responsibly and creatively to preparing for tactical training and its conduct. The situation in any training must be distinguished by its dynamics, saturation and diversity of action by the opposing side, by high intensity and in this way must arouse officers to search for creative resolutions to tactical missions and to display initiative in battle.

Do officers, the organizers and instructors of tactical training, always succeed in this? Unfortunately, I must state that this is not always the case. At times training is conducted in such a rote and uninteresting manner that you involuntarily wonder why the commander took people and equipment to the field. The practical development of an offensive battle doesn't give much to an officer, never mind a junior officer, if there is no unexpected maneuver in the battle, if movement is made in a straightforward manner, if targets are set up at well-known ranges and the "enemy" is portrayed as weak, helpless and not able to carry out cunning, decisive action.

One still runs into cases where senior commanders take excessive care of officers and even substitute for these officers. At times one even finds that it isn't the battalion or company commander controlling the battle, but the exercise instructor. He evaluates the situation for the students, makes the decision and gives orders to the subordinates. And then they have nothing to do but carry out the commands. They are deprived of the necessity of thinking. Where does one develop command maturity and military activity!

I again mentally return to the years at the front. From battle to battle, from month to month the consciousness of the very great responsibility grew in us, the commanders. And, characteristically, there were no wet-nurses in battle. Every officer, regardless of his youth and lack of experience, was trusted to resolve complicated combat missions and each was held strictly responsible.

Senior commanders and staffs had no doubt as to the self-dependence and expediency of action of small subunit commanders standing face to face with the enemy. At the same time, platoon, company and battalion commanders could always count on advice and help from their seniors in the critical moments of battle.

And one could come back at me and say that this is how it happened in war. People there got practical experience that could not be provided by several well-organized tactical exercises. I agree. Combat experience is special and is accompanied by real danger, risk, losses and blood. But that is what we are training for today, in peace, so that we are able to look danger in the eye and go to any risk to achieve victory over the enemy and not to go blindly, but only after thoroughly mastering the principle of the science of victory which was developed in the battle for the Motherland. This means that we must seriously and unflinchingly prepare commanders and soldiers for the possible severe test.

I must say that cases of a careless approach to preparing and conducting tactical training are rare and they receive fundamental command and party evaluation. I often have to view training which clearly recreates the picture of contemporary battle, exposes its character and peculiarities. This type of training battle is distinguished by its high maneuverability and dynamics and the rapid, sharp changes in the situation. It demands that commanders at all levels have high combat activity, self-reliance and initiative in their actions, also have the ability to foresee the course of events and influence them and confidently employ weapons and equipment.

Once I had occasion to be present at a tactical exercise in the motorized rifle regiment mentioned above. The motor riflemen conducted an offensive battle in complicated, extremely difficult conditions. The terrain was almost impassable, and the enemy had set up such a strong point that it seemed no force would be able to drive him out of it. You couldn't approach from the front and could hardly approach from the flanks. But Lieutenant Colonel Byzayev relied on this "hardly". After carefully studying the terrain, he made the corresponding calculations and came to the correct decision. He directed one of the battalions to envelop the strong point. Those places where equipment couldn't go, people could, and they made a strong attack on the flank.

The very situation created by the exercise instructor came as close as possible to front-line conditions and aroused the commander and all the personnel to resolve the mission in a front-line manner, resourcefully, assertively and boldly.

In this regard I notice that it is important to persistently study and creatively use front-line experience in conducting combat operations. Sometimes one can hear the question, "Where do you get this experience, from what sources?" I sincerely say that such a lack of awareness in these officers (and this is most often the result of poorly adjusted command exercises and party-political work) is bewildering.

Front-line experience in conformity with the new conditions for conducting war is thoroughly and clearly contained in our military regulations. One must thoroughly study the regulations, totally comprehend them and steadily put training and indoctrinating personnel into practice. And there can be no discussion of formulating command maturity in an officer if he doesn't thoroughly know the combat regulations and has no skills in working in accordance with them. Certainly one must be creative in the application of the regulations, but in such a manner as is useful.

If you look closely, you will notice that many things originating from front-line experience have taken root in the practice of conducting tactical training. These include high-quality engineer equipping of positions, using the factor of surprise in battle and executing different types of maneuvers. Commanders train soldiers to fully use the results of weapons strikes on the enemy, to move behind shell bursts and to land on the armor of tanks in difficult conditions where infantry fighting vehicles cannot go. These and many other things were prompted by the past war and the severe necessity of battle.

But there are also times when the experience is copied blindly, without considering the newest types of weapons and equipment, including weapons of mass destruction, new tactical methods and means of combat operations. For example, a commander shuts his eyes to the fact that his subordinates are trying to allow targets a little closer to the defensive position in order to get a sure hit. They say that this reprehensibly is how the front-line soldiers did it. But they do not consider that the range and accuracy of modern weapons and the speed of modern vehicles have increased significantly.

This means that they must get to work destroying the enemy on the far approaches to the defense.

It also follows from front line experience that missions assigned to personnel are carried out better and more completely when the commander, along with the political worker and the party-political organization, takes effective measures to develop the soldiers' high moral-political feeling and aims them at decisive, bold operations in battle.

I again remember my former regimental commander Lieutenant Colonel M. Frolov. This officer did everything to further the organization of party political work. Even in the extremely tense period when preparing for battles he and his deputy for political affairs Major I. Goroshnikov found time to talk with communist activists, meet with people, answer their questions and inspire in them pride and confidence in themselves. Communists Frolov and Goroshnikov taught the most active members of the party to work with soldiers under combat conditions and spread their efforts in subunits so as to guarantee an uninterrupted political influence on the combat activities of the military collective.

Before every battle, commanders, political workers and the party organizations did a lot to indoctrinate personnel with a very aggressive spirit. They used various methods to do this, including meetings, acquainting soldiers with summaries from the Soviet Information Bureau, propagandizing feats by soldiers and officers and relating stories about the brutality of the German fascist invaders. They organized discussions about the successes of Soviet soldiers on the Great Patriotic War front, about loyalty to their oath and about the duties of a soldier in the offense and defense.

By their personal example, communists inspired soldiers to courageous, decisive actions. I will never forget the feat of company party organizer Guards Sergeant Major Frol Sukharev. During one of the fierce battles several Hitlerites attacked commander Guards Captain N. Voronin. Sukharev covered the commander from the enemy bullets with his own chest and he received six wounds. Only after the sixth did he leave the battle field. The party organizers feat gave new strength to all the guardsmen.

Political workers A. Sokolov and I. Goroshnikov, Senior Lieutenant A. Veselov, party organizer Captain P. Safonov and other communists distinguished themselves through infinite courage and bravery. They personally led people in attacks and by their fiery words could mobilize personnel to achieve victory over the enemy. And the soldiers listened to the words of the communists, totally believed them and followed after them.

During the war political agencies and party organizations showed special concern for strengthening unity of command, for ideological tempering and for the communist development of officers. They did everything possible to raise the authority of the commander, indoctrinated in soldiers a love and respect for the commander, faith in him and the same attitude toward his orders as toward an established law. As a rule, in offensive or defensive battles the political agency worker and the political worker from the regimental level tried to be at the side of people who had recently taken over

their duties and also inexperienced commanders so as to support them and help them mobilize soldiers to fulfill the combat mission assigned to the regiment, battalion and company.

It is comforting to know that the front-line experience of party political work is actively used even now in the forces. I recently met with political workers and spoke at various gatherings, seminars and meetings. And after a speech, when an interesting and direct conversation as we have at party meetings begins, whether it is with experienced political organization chiefs or with young company and battalion deputy commanders for political affairs, I am convinced that they have adopted a lot and learned much from the commissars of the war years. The deep ideological conviction, the party passion for their work and their closeness to people allows political workers to effectively influence the resolution of the fundamental missions of strengthening combat readiness in units and subunits, to include command training.

During training one can always see Guards Major R. Khodzhayan, Guards Captain R. Abdeyev, Captain N. Tatarinov and other political workers in the midst of soldiers where success in the training battle is being decided, where the most difficult situation is developing, where their personnel presence brings the most benefit. And in field conditions they inform the soldiers about the complexity and explosiveness of the current military-political situation, publicize the exploits of hero-front-line soldiers and the glorious military traditions of the Armed Forces, explain the essence of combat training missions, urge people to act like front-liners, take part in reviewing socialist competition and in studying and disseminating the experience of the best. Their efforts support the high combat mood among personnel and people actively struggle for the best results for each day of training.

In recent years political agencies and party organizations have begun to get more boldly and topically involved in command training and to promote an increase in its quality with the forms and methods inherent in their operations. For example, in the Far Eastern Military District the majority of the political organizations and party committees in major units and units place their primary attention on the ideological-theoretical and military-technical growth of command cadres, on increasing their competence as organizers and authors of battles. And undoubtedly increased party influence has affected the fact that there is improvement in this most important area. But at the same time the deficiencies in command training that were mentioned above show that as of yet not all party organizations are always taking a fundamental position in the struggle to eradicate deficiencies and that they are not making strict demands on the communists for weaknesses and simplifications in training.

Preparing for a worthy meeting for the glorious anniversary, the 40th Anniversary of the Soviet peoples Victory in the Great Patriotic War, defenders of the Motherland are intensely working and are persistently improving their military skills. The professional maturity of officer cadres is an important and indispensable condition for effective training and for the further increase in combat readiness of units and subunits. Everything, front-line experience, the purposeful work of commanders and of political

organizations, party and Komsomol organizations and every officers personal zeal in military work, must be subordinated to its constant and steady improvement

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ARMED FORCES

LETTERS TO KRASNAYA ZVEZDA EDITOR, RESPONSES

Negligence in Northern Fleet

Moscow KRASNAYA ZVEZDA in Russian 21 Oct 84 p 2

[Article: "In Tidal Waves"]

[Text] This is what the critical correspondence of Captain 2d Rank Yu. Timoshuk, published in KRASNAYA ZVEZDA on 13 July, was titled. It discussed the careless and wasteful handling of equipment permitted in some units of the Northern Fleet.

Maj Gen Avn I. Vasil'yev has informed the editorial staff that the facts cited in the newspaper item have been confirmed. Lt Col Tverezovskiy has been severely reprimanded for the unsatisfactory organization of equipment transfer. Maj N. Zharikov and Sr Lt A. Ivanyuzhenko have been made answerable to party, disciplinary, and material accountability for failing to take measures to safeguard a prime mover. A fine has been levied on Maj Yu. Kudlai as well.

According to the Northern Fleet Chief of Naval Engineer Service, Col A. Dovgan', those guilty of removing parts from two bulldozers, chief of the UNR (work supervisor's office) Lt Col Ye. Tsymbalyuk and chief engineer Maj E. Chukin, have received severe punishment. In addition to disciplinary action, each has received a fine. Measures have been taken to rebuild the bulldozers and one of them is already ready for operation.

Captain 2d Rank V. Kozinskiy, acting chief of the political department of the Northern Fleet construction administration, has reported that the circumstances of a gantry crane becoming unserviceable have been investigated. By order of the Northern Fleet deputy commander for construction, UNR chief Maj O. Liobt has been given a severe reprimand for a negligent attitude towards his duties. For failing to put the crane into operation and for personal carelessness, chief UNR mechanic Lt Col N. Chukhnov has been punished by party procedure and has been given a severe reprimand. The gantry crane is presently in operation.

Motor Transport Deficiencies

Moscow KRASNAYA ZVEZDA in Russian 21 Oct 84 p 2

[Article: "Empty Trips"]

[Text] That is what the correspondence published on 17 August, which criticized deficiencies in organizing the transport of goods by military motor transport, was titled.

Responses have been sent to the editorial staff from Lt Gen Yu. Andrianov, Maj Gen V. Gromakov, Maj Gen V. Lukin, and Col Ye. Makarov. They report that the newspaper item has been discussed with the officers, warrant officers, and all personnel of the motor units and subunits with which the article dealt. The procedure for planning the transport of goods and the operation of motor transport has been examined. The attention of the unit commanders has been directed to the need to strengthen the monitoring of the proper utilization of motor transport, and also to the taking of additional economic measures for the careful expenditure of engine life and fuels and lubricants. Instructions have been given about a monthly summing-up of the results of motor vehicle service and subunit work, taking into account the observations of GAI (State Motor Vehicle Inspectorate) and VAI (Military Automotive Inspection Service) organs and the strengthening of educational work with the driver complement and vehicle commanders. Those guilty of violating the procedures for the transport of cargoes and motor transport operations have been punished.

Marital Problems Discussed

Moscow KRASNAYA ZVEZDA in Russian 27 Oct 84 p 2

[Article: "No, It is not a Personal Matter", under the rubric "From the Editorial Staff's Mail"]

[Text] "It's My Personal Affair". A letter of Lt V. Korniyev, in which the author told about disorders in his family, was published under such a headline on 31 August. His wife had left the garrison, departing under the wing of parental guardianship. Korniyev expressed disagreement with the decision to hear him in a session of the unit VLKSM (All-Union Young Communist League) committee regarding this matter.

Mail to the editorial staff has brought many readers' responses. Today we are publishing several of them.

I have read the letter of Sr Lt Korniyev and also have taken up the pen. It is always distressing when a young family falls apart, fond dreams are ruined, and love is buried. It is twice or three times as bitter and pitiful when it happens to an officer's family. Difficult experiences often befall it, with long separations and continual anxiety for the fate of a loved one. I have been convinced by my own experience. I have been an officer's wife for nearly thirty years. The most faithful helper here is purity of feelings and a desire to support a dear person with all one's power and in any way possible, to help him in a difficult moment, and to fill those so rare free minutes with heartfelt warmth. This is how it was and still is in our family. My husband and I have lived a full life. What ordeals did not befall us. But we were fortunate because we overcame them shoulder to shoulder. Everything was common with us--joy, sadness, success, and misfortune. Our love, and a readiness to endure all, to cope and to fulfill our duty to the Motherland, helped us to prevail in any adversities and foul weather.

Unfortunately, such feelings are not held by some of the young officers' wives. This is not an unsubstantiated assertion. I have seen enough of this. At every little trifle they hurry to their parent's hearth. What love there is there! And still more. It seems to me that if real interest in the fate of their comrades and a desire to help guides the Komsomol members, then Korniyev simply must be grateful to them. I know only how difficult this business is--to look subtly into such a "personal affair" of he who lives and serves next to you. A. Paramonova

The wife of my friend, a young officer (we'll call him Victor B.), also left him recently and went to her parents in the city. Who is guilty in this? Not too long ago many envied their family happiness. Really, I knew how difficult it was for them to maintain it, how day after day their relations grew strained. What caused this? Nadezhda, my friend's wife, got used to a different life, and then.... For water one must go several hundred meters; and for produce, to the village where the path is also far. They had a child. They would have put him in a day nursery, but there was none. For a time they patiently suffered all hardships. And then she said, "I can take no more," and left our remote "spot".

They summoned Victor B., as they did Sr Lt V. Korniyev, to a Komsomol committee meeting and charged him for not, they say, saving his family. He could, of course, have said where were you earlier when our family was in need of help and support? But my friend remained silent. A real big misfortune had burst into his life and he lost his head. But the committee members continued, unsparingly, to spout loud words about honor and conscience.

It so happened that several days later a senior chief arrived to examine the status of our Komsomol work. He rated it highly. He commended it particularly for the high-mindedness and exactingness manifested in regard to my comrade. Did not Sr Lt V. Korniyev fear such a "hearing"?

Sr Lt V. Osinin, Red Banner Baltic Military District

Letter to Editor Gets Results

Moscow KRASNAYA ZVEZDA in Russian 27 Oct 84 p 2

[Article: "Callousness", under the rubric "Measures Taken Due to Readers' Alert"]

[Text] Misfortune befell my son. He became an invalid at the age of 21. A bow to the ground and a mother's thanks to the doctors who returned him to life.

But the day came when the papers had to be put together to send my son to the VTEK (Disability Review Board) with subsequent establishment of a disability category for him. I applied to the Tyrnyauz city military commissar, Lt Col R. Kasakyan, with such a request. I received a rejection. He did not want to make an inquiry by established procedure to the hospital distant from us where our son was being treated and ask for the necessary documents to be sent. I haunted the military commissariat with my request but all the time ran into a wall of indifference and callousness. Thanks to the good people. They suggested that I call the hospital myself. I found out that the documents had been sent to the military commissariat last October. And so through the fault of a heartless person my son got through the medical commission with great delay. They established his disability category and decided to provide him a free automobile.

The red tape has not ended here. The business with the car not only has been delayed, but has reached a deadlock. More importantly, they have refused to send my son to the sanatorium for the treatment which he critically needs. I am at a loss as to what will happen further.

Ye. Akhtyrskaya, Kabardino-Balkar ASSR

Dear Yefaliya Semyenovna! We have sent your letter to the political administration of the North Caucasus Military District. The first deputy chief of the political administration, Maj Gen O. Zinchenko, has reported to the editorial staff that Lt Col R. Kasakyan has been subjected to disciplinary action and is being made answerable to the party for thoughtless attention to your request and for the procrastination permitted by the Tyrnyauz city military commissar. The need to bar occurrences of a disrespectful and formal attitude to the requests and applications of visitors to the military commissariat has been strongly pointed out to Col V. Bolgov, the republic military commissar. Your

son will be given a free automobile with hand controls by the KBASSR Ministry of Social Security and will be granted accomodation in the sanatorium wich full payment of expenses by the state.

Violations in Housing Allocation Discussed

Moscow KRASNAYA ZVEZDA in Russian 30 Oct 84 p 2

[Article: "In Different Languages"]

[Text] In correspondence published under such a headline on 28 July and 5 October, there was discussion of the confusion in the distribution of housing in one of the Kiev Military District installations. For example, the apartment initially allotted to Maj G. Litvinenko was subsequently reallocated to another family.

The deputy chief of the district political administration, Maj Gen M. Tarakanov, has reported to the editorial staff that the newspaper articles have been examined again at a meeting of unit commanders. The personnel at fault in violating housing allocations procedure have been severely reprimanded. Maj G. Litvinenko has been allocated a three-room apartment.

Request for Repairs Unheeded

Moscow KRASNAYA ZVEZDA in Russian 1 Nov p 4

[Article by Capt 1st Rank A. Zlydnyev, KRASNAYA ZVEZDA correspondent, Red Banner Pacific Fleet: "On the Brink of Winter", under the rubric "Letter with commentary"]

[Text] Dear editorial staff!

We live in a remote garrison. The installation is located in a scenic place. We have clean air, and in the summer there are flowers and most everything is green. It would seem that we should live and be happy. But happiness is clouded over from year to year by everyday disorder, and especially with the approach of winter. The heating system has been in need of major repair for a long time, but there is no one likely to do it. Nor is there anyone, judging from appearances, who will be busy with our leaky house roofs or improving the sanitary conditions of the installation.

Maj V. Nagorskiy (Res)

Here is the last bend of the bumpy road, framed by tall trees colored by autumn. Multicolored leaves rustle under foot. Maj V. Nagorskiy and the chief of the housing administration, T. Koryakovaya, walk from house to house and see with their own eyes that the installation is not ready for winter.

"At the beginning of June a brigade was formed, by order of the garrison chief, to repair the heating lines and other objects," related Tat'yana Ivanova. "However, they never succeeded in assembling the people assigned to it from the subunits. Whenever I call the answer is the same. 'There is no time.' Of course the commanders have many other important concerns. But, really, one must think about the families and the children."

This reproach was addressed to Maj V. Glushenko, G. Pavlov, and V. Vantsev. The reproach, of course, is a fair one.

"True, the boiler room has been repaired," Tat'yana Ivanovna brightened up and immediately again grew melancholy, "but no one is sure that the old heating pipes will stand the pressure".

"That means, I suppose, that we'll have to endure the cold in our apartments just like last winter," said Warrant Officer V. Kravchenko, who had joined us and entered into the conversation.

"This is my third winter here. The radiators in the apartments are chronically cold," Sr Lt V. Vishnevetskiy supported the warrant officer. "There are also interruptions in the supplying of electrical energy. And whenever we turn for help, our requests remain unanswered".

"That's not correct, Vladimir Anatol'yevich," Maj V. Nagorskiy took a sheet of paper with an official stamp out of his briefcase. "Here is the response, familiarize yourself with it".

Chief of the fleet Air Force rear services, Col V. Makartsev, in a letter of 18 September, notified those living at the installation that a broad plan to prepare for the winter had been developed and a wide range of work outlined, which must be completed...on the 10th of October.

And so, as they say, commentary is unnecessary.

PX Manager Unresponsive to Requests

Moscow KRASNAYA ZVEZDA in Russian 1 Nov 84 p 2

[Article by Capt 3d Rank V. Novikov: "On the Rights of a Stepchild", under the rubric, "Letters to the Editorial Staff"]

[Text] There is a sailors' tearoom in our unit. At first glance, there is everything in it that you need--tables and chairs, tea and sugar. But is this sufficient for the tearoom to become a favorite resting place for the seamen? Of course not. Judge for yourselves. According to the assortment minimum there must be vegetables and fruit, snacks and sandwiches, and milk products. But you don't see them in our tearoom. Many chairs and tables are broken, and the windows here and there have been smashed.

How does such a thing happen? The former tearoom manager, N. Tronda, interjected this to explain. "You are sailors, but the PX is subordinate to the Far East Military District".

It turns out further that a third of the equipment, sent here by the PX run by Lt Col I. Morozov, doesn't work, and the heating cabinet is completely disassembled. None of the PX workers bears any material responsibility for the equipment.

There is still one more stumbling block. From the day the tearoom opened, the food outlets which supply the produce have not changed once. It's as if this tearoom is a stepchild.

More than once we have appealed for help to the PX management and asked them to set the work of the seamen's tearoom straight. But thus far no one has responded to these requests.

Unfair Kindergarten Waiting List Scored

Moscow KRSNAYA ZVEZDA in Russian 1 Nov 84 p 2

[Article by Sr Lt A. Krutov: "We Wait and Wait", under the rubric "Letters to the editorial Staff"]

[Text] Dear Editorial Staff!

We are appealing to you for help. For more than five years we have been unable to get a place in the kindergarten for our children. We have been first on the list for two years. Many who were after us in order already are bringing their young ones to kindergarten, and we still wait and wait.

Having lost patience, I turned to a political worker, Lt Col Gafina, but nothing has changed. Honestly speaking, I'm hurt! One wouldn't have to wait so long with a fair apportionment of the places. Twenty children leave the school every year, but they take 3-4 from the list to replace them. Where do the rest come from? As before, we hear only promises.

Library Books Lost Through Negligence

Moscow KRSNAYA ZVEZDA in Russian 1 Nov 84 p 2

[Article: "Acts and Facts"]

[Text] Correspondence of Lt Col M. Ziyemin'sh, which talked about the loss of nearly a thousand books from the library in N unit, was published under such a heading on 21 June.

As Lt Col Yu. Ogay, acting chief of the propaganda and agitation department and acting deputy chief of the Volga Military District political administration, has reported to the editorial staff, it has been established that the books were lost through the fault of the former library director L. Penkina, and also because of the absence of proper monitoring of the library's work on the part of a number of officials. This has been pointed out to the unit commander and his political deputy. The club manager, Capt A. Tsukanov, has been disciplined and a reduction in appointment recommended. At the present time an administrative investigation of everyone in arrears is being conducted at the library. T. Kukharskaya, an employee of the Soviet Army who has a higher specialized education, has been named to the position of library director. The conclusions arising from what happened have been communicated to library directors and heads of cultural and educational establishments at district assemblies by the political administration. In the unit and the military educational institutions of the district, instructions have been given to conduct extraordinary inventories in all libraries.

The response of the Volga Military District judge advocate, Maj Gen of Justice A. Polonskiy, also has been sent to the editorial staff, in which, in particular, it is reported that criminal action has been taken against the former library director L. Penkina.

Action Taken Against Indifference

Moscow KRASNAYA ZVEZDA in Russian 2 Nov 84 p 2

[Article: "How to Fight Against Indifference"]

[Text] That is what the letter of a Soviet Army worker, L. Terent'ev, that was published on 18 September, was entitled.

As the chief of the political department of naval special units, Col N. Beda, has reported to the editorial staff the facts pointed out in the publication have been confirmed, and measures taken to eliminate deficiencies. Sr Eng V. Ovcharenko has been reprimanded for poor organization of socialist competition and weak control. The shop chief, V. Mel'nik, has had the untimely performance of industrial operations and low degree of exactingness severely pointed out to him.

The chairman of the unit's trade union committee, I. Filippenkov, has been heard at a session of the presidium of the Black Sea Fleet trade unions. The committee derelictions of duty have been pointed out to him.

The newspaper publication has been discussed at a conference of the leaders of the enterprise, and also at a general assembly of workers and employees.

Survey of KRASNAYA ZVEZDA Mail

Moscow KRASNAYA ZVEZDA in Russian 2 Nov 84 p 2

[Article: "The Mail of KRASNAYA ZVEZDA"]

[Text] In October the editorial staff has received 11,001 letters from readers. Four hundred ninety-nine of them have been published in the newspaper. Eight hundred fourteen responses to KRASNAYA ZVEZDA publications have been received. Service personnel of the army and navy, as do all Soviet people, warmly approve and unanimously support the decisions of the CPSU Central Committee October (1984) Plenum and the address there of comrade K.U. Chernenko, general secretary of the CPSU Central Committee. The numerous letters from readers' received in the final days of the past month are witness to this. Warrant Officer S. Kostyryev, for example, writes, "Prior to service in the army I spent several years working in agriculture, including work as a land reclamation specialist. The concern of the party and the government about the further raising of the well-being of our people is expressed in the land reclamation program. I am proud that with a weapon in my hands I am ensuring the peaceful constructive labor of the beloved Motherland."

And these lines are from Maj M. Koslov. "In the Kaliningrad Higher Engineering Order of Lenin Red Banner Academy of Engineer Troops imeni A.A. Zhdanov, active work in the study and propagandizing of the materials of the CPSU Central Committee October Plenum is being conducted. Communist officers V. Yershov, V. Slobodskov, V. Khabarov, and others present lectures and talks to the students, and explain the party's agrarian policy to the listeners. Thematic morning sessions and evenings of questions and answers on the materials of the Plenum are being prepared in the school."

In last month's mail there were many letters in response to the All-Union Conference of Peoples Controllers held in Moscow. One of its participants, Col V. Batura, writes, "We all listened with great interest to the brilliant speech of comrade K. U. Chernenko. Army and navy peoples control organs will have to still more actively carry on the struggle for economy and thrift, and make a more substantial contribution to the cause of raising combat readiness and strengthening military discipline."

Last month was the eve of the 67th Anniversary of the Great October. Our readers reported and are reporting about what successes the military and worker collectives are meeting the national holiday with. Final exercises and practice inspections have been conducted in the army and navy. The majority of units and ships have fulfilled their socialist obligations completely. The letters of Maj N. Borisenchuk, Capt A. Potanov and V. Shumakov, Warrant Officer N. Anokhin, and many others address this in particular. At the same time, the writers correctly consider that the advances attained in training and military education

must serve as the basis for further improvement of combat skill, and that it is necessary to carefully study the experience gained by the foremost subunits and make it the property of everyone.

An analysis of the editorial staff mail attests to the fact that the army and navy are actively preparing for the 40th Anniversary of the Victory of the Soviet People in the Great Patriotic War. In their letters the readers discuss military traditions of units and ships, lessons in courage undergone, thematic evening meetings, and other measures. Meetings with frontline troops have a special place in the heroic and patriotic education of servicemen. Their recollections teach vigilance, love for the Motherland, and hatred of imperialism. Col (Ret) F. Lobeyko of Voronezh discusses one such meeting.

"Recently it was crowded in a renowned guards aviation unit. Frontline troops and veterans of the regiment had come to a meeting with the aviators. We were visiting a school class and took part in a festive meeting. Together with the personnel we placed flowers at the monument of those fighting men who died in battle with the German fascist invaders. And then the veterans shared their recollections of the war."

The letters of the front-line troops are read with emotion. Our fervent gratitude to those heroes who won the Victory will never cease. Many letters testify to how our people lovingly and sacredly revere the memory of those who were killed in action. But, unfortunately, disturbing news is also encountered in the voluminous mail on this subject. Vera Vasil'yevna Mozzhukhina, from Ivanov, writes with sadness, "The beautiful village of Zolotkovo stands on Pskov soil. Horrible battles took place here in the war. A common grave by the road beyond the outskirts remind us of this. Here with his brother soldiers my soldier father is buried, struck down by an enemy bullet in January of '43. Unfortunately, the grave is not taken care of."

Dear Vera Vasil'yevna! The editorial staff has taken control of your letter along with others and directed them to the proper authorities for action. Information on the final results will be published in the newspaper under the permanent rubric, "Measures Taken On Readers' Warnings."

12198
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GROUND FORCES

REDUNDANT TRAINING DEPRIVES NCO'S OF INITIATIVE

Moscow ZNAMENOSETS in Russian No 9, Sep 84 (signed to press 24 Aug 84) p 7

[Article by Senior Lieutenant A. Lyakhovskiy, motorized rifle battalion chief of staff, Group of Soviet Forces in Germany: "Are They Operating According To The Situation?"]

[Text] Sergeant E. Lomov's motorized rifle squad was operating on the company's left flank when an "enemy" machine gun unexpectedly opened up. What should the sergeant do? He should have quickly evaluate the situation, made a well-grounded decision and put it resolutely into action. In the situation at hand, the correct decision naturally was to concentrate the squad's fire to destroy the target and then complete the assigned mission.

However Lomov did otherwise. He decided to envelope the target and attack it from the left, but in doing so the squad came under flanking fire. In a real battle it would have been put out of action completely. Because of the sergeant's error the company had to realign its formation and during this realignment another error, this one allowed by Sergeant S. Dorozhkin, was discovered. A counterattacking tank appeared in his sector and the moment for aimed fire was at hand. However, grenade launcher Private M. Khirov who had changed his position missed the moment and he opened fire only after the platoon commander ordered him to. And why hadn't Sergeant Dorozhkin given that order, as it was his responsibility? Because the squad commander had been distracted by automatic weapons fire and the actions of subordinates he didn't command.

This field exercise showed that not only Sergeants Lomov and Dorozhkin, but also several other junior commanders were unable to act as the situation required. Is it possible that we do not teach them this?

"This is taught," squad commanders confirm. "Our sergeants are able to shoot accurately, drive combat vehicles well and exceed various norms..."

But are these their primary qualifications? The tactics of contemporary combined-arms battle is leading toward the further growth of small-unit independent operations, and therefore the independent operation of these commanders.

Do exercises and training induce sergeants to creatively apply their knowledge and skills, do they promote educating command qualities and do they teach commanders to quickly understand the situation at hand and to apply the most rational tactical methods? Unfortunately, not always.

Until recently suitable situations were developed in tactical training exercises and at times even during commander's call with sergeants. Changing slightly, these situations varied from plan to plan and from context to context and instead of the sergeants operating according to the situation, they operated by rote.

For example, Sergeant Lomov made the unshakeable decision to envelop the "enemy" every time and people said, "Fine job, he showed initiative". Sergeant Dorozhkin always decided to repulse the "enemy" counterattack from his position and in this way himself set the example in destroying targets. He was also lauded by "look at how many targets he destroyed." And where did this lead? During training Lomov led his subordinated in the traditional envelopment and an officer had to command the squad instead of Dorozhkin.

And as the saying goes, the cost in sergeant command training is at hand. On the one hand they have caused a training level that is not high enough and on the other hand they have engendered the very organization of this training. As reality is showing, a two-day training assembly instead of the weekly single exercise is very beneficial. Take motorized rifle squad commanders for example. You can bring them together in one group in a battalion and you gain a number of advantages. First of all, you can appoint the most knowledgeable and experienced ones as exercise instructors. Moreover, the efficiency of each hour significantly increases the quality of training time since you can prepare better training aides more completely, cover the tactical field more inventively and so forth.

We must also make some changes in planning. The training schedule for junior commanders is put together best when its subject is more advanced than the analogous materials taught to soldiers. And what does that give you? Sergeants will arrive at exercises ready to be the instructor of the training location and point. Now some of them study along with their subordinates and naturally this is not conducive to increasing the quality of training.

We have developed some experience in conducting two-day training assemblies and this is how "The Motorized Rifle Squad In The Attack" exercise went.

At first Captain A. Kireyev, relying on the Field Manual, gave his sergeants the methods for transitioning to the offensive and the type of missions resolved by a squad. He then gave them the basis for various tactical norms and methods and revealed the sequence for making decisions. The officer reinforced his conclusions with examples from the field experience of battalion personnel. The account was interesting and instructional, aroused a lively response in the sergeants and excited them to learn as much as possible about this type of combat operation.

They were given the opportunity to train independently and this was headed by Senior Lieutenant Yu. Glukhov. His mission consisted of training squad

commanders for the upcoming group exercise in the field and he therefore narrowed the subject matter, discussing not the offensive in general, but attacking a defending enemy from the march. Using individual conversations with the sergeants, he checked how each of them had mastered the Field Manual regulations and their duties, for example, on the march as commander of a patrol vehicle and whether they knew the appropriate tactical norms and command and control signals. He reminded them of the rules for working with maps and about the subunit organization of the probable enemy army. He analyzed the basic tactical methods, to include moving to the attack line, deploying into combat formation, crossing mine fields and explosive obstacles and maintaining the indicated direction, in a terrain mock-up. At the conclusion of the exercise he trained the sergeants to work with communications equipment.

This is what took place in the field. The sergeants operated as a motorized rifle platoon. They were broken down into squads and commanders were appointed. At the first stage Sergeants A. Zaugol'nikov, N. Uchaykin and V. Vlasov were the commanders and by the end of the exercise everyone had operated in one of these positions. Each one carried out some fire missions and completed several complicated hypothetical situations. In short, the sergeants operated in the intense, dynamic situation dictated by the logical development of real battle.

I will note that these exercises took place on the same terrain as earlier, but the quickly changing target and tactical situation prepared for the training assembly and the non-standard hypothetical situations eliminating rote decisions.

We have squad commanders individually display their knowledge and skills during small tactical patrols and instructor-methodological exercises. This is done in written form when the objective is to check sergeants' knowledge of tactical norms and the organization, weapons and equipment of NATO-country army subunits. It is done orally in the "question-and-answer" format when the issue is regulatory statutes.

And at the next tactical exercise the platoon was in position to deploy into a platoon column when the platoon commander "became a casualty". Sergeant Dorozhkin took over his duties and his actions logically flowed from the situation in which they are operating. He marked the line of attack at a point where a depression allowed the motor riflemen to secretly come out at the less defended sector of the "enemy's" defense and make a sudden flank attack. Conforming to the situation, Dorozhkin concentrated his fire in a timely fashion and thanks to this the platoon's assigned missions was successfully completed.

An analysis of Sergeant Dorozhkin's actions and those of other junior commanders is convincing. We must develop different variations for resolving the assigned missions with each of them at assemblies, group exercises and small tactical patrols. I understand that working individually with each sergeant during command training exercises is no simple matter, but all the same, in my opinion, this is the primary way to perfect this area.

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AIR/AIR DEFENSE FORCES

PVO UNIT STRIVES TO INCREASE REALISM OF TRAINING

Moscow KRSNAYA ZVEZDA in Russian 27 Dec 84 p 2

[Article by Lt Col A. Savitskiy of the Belorussian Red Banner Military District: "A Complex Exercise"]

[Text] The "Assembly" call sounded. Soon the personnel of the surface-to-air missile division proceeded with the exercise. It began dynamically, becoming more and more complicated with every minute. Whereas, during the previous exercise, there had been only a few target pips on the display screen after the set was turned on, this time there appeared a great number: the "enemy" had launched a surprise mass air attack.

The situation had become irregular at once, and I thought respectfully of the officers who had programmed it. It was sensed that they had thoroughly learned the capabilities of the simulation equipment, the different means available to the division, and local conditions. It was not so simple, let us say, this time for Lt S. Engl'ka, the guidance officer, to solve the problems appearing before him. Here he concentrated on the most important target, and gave the required commands to the operators. Already in the next instant, however, a target pip on the screen split into two, and the guidance officer had to make a new decision. Besides, that, the "enemy" applied intensive jamming....

It was no easier for the soldiers of the launching battery. At the instant they began to prepare the launching equipment for battle, shots and bangs, simulating grenade explosions suddenly resounded nearby. The launching battery commander, Capt D. Terekhov, reported to the command post about seeing "saboteurs" approaching the division's position, and he was then forced to divert several specialists to repel of the ground "enemy" the attack. The "saboteur" destruction group was headed by platoon commander senior warrant officer G. Tupichkin.

Almost everyone left at the launch installations now had to do the work of two. But there was no time to complain about the heavy burden: the sounds of the ground battle which had begun were heard quite near the position, and the command post was demanding the immediate preparation of the missiles for launch. The work of missile crews is not an easy thing at all, and now--especially so. In a few minutes, their faces were already covered with

sweat, and several removed their gloves--it was more comfortable that way. Nevertheless, as it should be, they prepared the launch equipment in good time. The first hypothetical launch--the first victory....

The following is recalled in connection with what occurred at the command post, in the compartments and at the launching area. One day, in a division-procedural conference, someone reasonably pointed out that missile crew exercises are sometimes held without creating the proper work load for the combat teams. Thus, guidance officer and the operators basically work on single targets. the missile crews sometimes come out to exercise without weapons and individual protective equipment against weapons of mass destruction. The majority supported the criticisms. The observations were discussed at the division methods council. In the course of the discussions it became clear that the officers who handle the simulation equipment knew it poorly. Hence the major cause of simplified situations in the exercises.

The division's commander, staff, and methods council have worked out measures for improving the exercises and for approximating the conditions of real warfare as much as possible. In accordance with this, a course of studies has been held to learn the simulation equipment and the methodology for its competent utilization. The officers also have taken much of use from the demonstration tactical exercise. This complex exercise which recently took place in the division also says much about the realization of the measures that have been worked out. On the whole, it came off successfully. But most importantly, taking into account the lessons of the past, in the exercise critique the officers concentrated more not so much on the successes as on how to make military training even more intensive, high in quality, and responsive to all the demands of battle.

12821

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SPECIAL TROOPS**MAJ GEN RUDAKOV ON NEW LABOR REGULATIONS**

Moscow KRASNAYA ZVEZDA in Russian 18 Dec 84 p 2

[Article by Major General E. Rudakov, Chief of the Directorate of Labor and Salaries for USSR Ministry of Defense workers and employees: "The Work Routine"]

[Text] The USSR State Committee on Labor and Social Issues has approved the new Standard Rules for the Internal Work Routine covering workers and employees of enterprises, institutions and organizations. These rules were coordinated with the AUCCTU [All-Union Central Council of Trade Unions]. KRASNAYA ZVEZDA readers A. Ustinov, N. Vasil'yev, Yu. Poskonov and others are interested in the contents of this document and the particulars of how it will apply to the Army and Navy. At the editor's request, Chief of the Directorate of Labor and Salaries for USSR Ministry of Defense workers and employees Major General E.N. Rudakov answers them.

As is known, the Standard Rules for the Internal Work Routine is a basic all-union document regulating the work organization for workers and employees directly involved in production. This document now reflects the statutes of Labor Collective Law, the recommendation of the CPSU Central Committee, the USSR Council of Ministers and the AUCCTU "On Increasing The Work Of Reinforcing Socialist Labor Discipline" and other normative acts. This allows the Standard Rules to have a more active influence on educating a communist attitude toward work in workers and on strengthening the order of labor collective organization.

The Standard Rules fixes the general state of Soviet labor legislation, the sequence for entering and being discharged from work and the basic responsibilities of workers, employees and the administration. The Rules also determine the sequence for using work time and the use of incentives and punishments. Democratic principles for controlling the work process are further developed and the labor collective's role in guaranteeing that every worker strictly adheres to the rules of the internal work routine is expanded.

Appropriate ministries and departments are urged to develop normative acts to reflect the specifics for strengthening labor in the various spheres of the

national economy. Therefore, in accordance with the right granted it by the central committees of a number of professional unions, the Rules for the Internal Work Routine for workers and employees of the Soviet Army and Navy were also developed and put into affect in the USSR Ministry of Defense. These will be the foundation for the development of rules for the internal labor routine in every military unit, department, military training institution, enterprise and organization and will be approved by the appropriate commander (chief) in agreement with professional union committees.

Based on the peculiarities of labor contracts in the Army and Navy, the aforementioned rules stipulate that before they begin work the command notify people that they must accept their duty solemnly and under oath, that they complete orders exactly and in a timely fashion and that they safeguard military and State secrets. At the same time, in accepting people for work, the command is forbidden to require that these people present documents not stipulated by the law (for example references, questions about family situation, etc). Acceptance for work is formalized by order of the unit commander or chief of the institution or enterprise, but if the worker is accepted for work by the appropriate official (for example by the chief of a structural subelement) then the labor contract is considered valid even before the order is published.

The worker must notify the command in writing of his desire to terminate a contract that is for an unspecified period and this must be done two months before the termination date. In this regard, the time for completing work which the worker has been temporarily assigned for violating work discipline is not included in this advance warning period. If the contract is terminated for a valid reason (for example, a wife is moved to another location where her husband lives), then the worker must give only one month's advance notice.

The new rules expand commanders' (chiefs') basic responsibilities in creating conditions for the growth of labor productivity and improving the quality of work and also in reducing manual, low-skill and intense physical labor. These rules especially stress the need for comprehensively developing brigade organizational forms and stimulating labor. Officials are forbidden to take workers and employees away from work to do social assignments or other missions not associated with production and calling meetings and gatherings during work hours for social matters is also forbidden.

Workers and employees must use all their work time for productive labor, increase the quality of labor and observe work discipline. One of the new statutes on workers' responsibility for disciplinary violations is the fact that they can be transferred to a lower paying job or shifted to a subordinate position regardless of profession or specialty for up to three months for systematically violating discipline, being truant or appearing intoxicated at work. This type of transfer is disallowed only if the work is contra-indicated by the individual's health. And the concept of truancy is being treated in a new fashion. A worker is considered truant if he is absent from work for an invalid reason for more than three hours (either uninterrupted or additive) during the course of a work day. The truant individual must reduce his next leave by the number of truant days, although this leave cannot be less than 12 working days. Showing up at work intoxicated is a gross

violation of work discipline and, along with truancy, can be the sole reason for dismissal from work.

The commander (chief) in addition to punishing the violator has the right to refer the question of a disciplinary violation to review by the labor collective, a comrades' court or by a social organization.

The Rules of the Internal Work Routine are to be posted in a visible location in shops, laboratories and other subelements.

In conclusion, I want to again stress that the conscious observance of these rules by officials and by every worker and employee will promote the further growth of labor efficiency and quality and the fulfillment of labor collective missions.

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FOREIGN MILITARY AFFAIRS

U.S. MILITARY USE OF LASERS

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 11, Nov 84 (signed to press 10 Nov 84) pp 18-23

[Part One of two-part article by Lt Col S. Cherkov: "Lasers in Military Affairs"; passages rendered in all capital letters printed in boldface in source]

[Text] The Reagan administration, having declared that its primary task was to achieve U.S. military superiority over the USSR and pursuing clearly aggressive goals in so doing, significantly increased appropriations for research, development and production of new kinds and systems of weapons. As follows from foreign press reports, special attention is being given to use of the latest achievements of science and technology, to acceleration of the rates of their practical implementation in the weapons of warfare, and to development of a military scientific potential through intensified financing of basic research and of experiments having a military direction.

It already has become traditional to illustrate modern rates of scientific-technical progress using as an example the practical implementation of achievements in quantum electronics. A little more than 20 years have passed since the first low-power optical quantum generators, or lasers as they are called, began to operate in the world's science laboratories. The appearance of lasers led to a fundamental transformation of optics, it contributed to progress in practically all fields of science, technology and production, and it had a substantial effect on the development of military affairs.

The laser is a unique device in almost all respects. The most important properties of the laser beam—extremely high emitted intensity and directivity—sharply distinguish it from any other source of emission.

The laser's emitted intensity is so high that the concept of a material's infusibility is devoid of meaning with respect to the laser. A laser beam can melt and vaporize any substance. Whether or not this occurs depends on the beam's energy, i.e., the emitted power and the time of its effect. Directivity of emissions is determined by the divergence angle of the beam emitted by the light source. Only laser emitters permit forming beams with a divergence approaching the diffraction limit. For example, with the help of an optical system one meter in diameter a laser emission in the visible band can be

concentrated in a beam with a divergence of one microrad; in this case a spot around one meter in size will result at a distance of 1,000 km (if the beam propagates outside the atmosphere in space).

Lasers also surpass ordinary light sources in such features as monochromatism (the capability of generating electromagnetic energy in a narrow spectral band of wavelengths), coherence (the coincidence in time and space of an electromagnetic wave phase), and specific output of energy from a unit volume (weight) of the source of emission.

The wave band of modern lasers presently covers the electromagnetic spectrum from millimeter radio waves to x-rays. Emission in the infrared, visible and ultraviolet regions is obtained at thousands of discrete wavelengths. Highly stable emitters have been developed which are capable of operating a long while at a fixed wavelength, and generators have been developed which permit a continuous retuning of the emitted wavelengths in the visible and infrared bands.

Existing lasers can operate effectively in continuous, monopulse and pulse-frequency modes with a pulse repetition frequency [prf] reaching tens of kilohertz. According to published foreign data, the mean emitted power can reach hundreds and even thousands of kilowatts, while the emitted energy in a pulse can reach tens of kilojoules.

Lasers already are being used in military affairs in equipment for laying weapons, location, reconnaissance, communications and data transmission, as well as for the navigation of flying craft, for countering enemy electro-optical systems, and for training personnel. Great emphasis abroad is being placed on the development of a beam weapon based on lasers.

The development and use of laser devices in weapon systems not only involves an improvement in tactical and technical characteristics of pieces of combat equipment, but it also requires a revision of the existing set of views on principles of their use and of waging combat actions.

Judging from foreign press reports, devices for semiactive guidance to a laser-illuminated target are the most widespread FOR WEAPON CONTROL. They are used in guided aerial bombs, air-to-ground and ground-to-ground missiles, and in projectiles of field, shipboard and coastal artillery. For example, bombs with such guided systems began to be developed in the United States in the late 1960's and they were being used by American aggressors for the destruction of targets in Vietnam as early as the beginning of the 1970's.

The operating principle of semiactive guidance systems using lasers is as follows.

The chosen target is illuminated by the beam of a laser (Fig. 1 [figure not reproduced]) operating in the pulse-frequency mode with a prf of around 20 Hz, usually in the infrared band. The illumination can be done by various methods: from a forward observation post or from a special aircraft, helicopter or drone on standing patrol in the target vicinity. It is done by sending coded

pulse bundles. The coding is necessary to increase the antijam capability of the guidance system and to distribute targets among various means of attack, since several laser designators may be used on the battlefield simultaneously.

The laser emission reflected from a target is received by the homing head (GSN), which has maximum sensitivity at the wavelength of the laser emission. The optical GSN system uses special filters which pass only a given operating wavelength and suppress emissions of another band. This is done to increase the guidance system's antijam capability relative to natural sources of emission such as the sun, centers of fire and so on.

The laser GSN is functionally similar to the widely known infrared homing heads of air-to-air missiles but its design is simpler in connection with the fact that the problems of target selection and jam protection are solved by another method and so the laser homing head is cheaper and more reliable.

On being detected by an onboard coordinator, a target illuminated by a laser designator additionally can be engaged by conventional unguided weapons of attack aircraft and fire support helicopters.

In the opinion of foreign specialists the use of weapons with semiactive laser guidance permits diversifying the principles of weapons' combat employment in destroying point targets on the battlefield and in the tactical depth of defense, increasing the selectivity and efficiency in destroying targets (including moving targets), rejecting the use of nuclear weapons in a number of cases, and considerably reducing the detail of forces and means assigned to accomplish individual combat missions.

Foreign specialists believe that laser guidance systems also have certain deficiencies. Laser emissions are heavily attenuated when they propagate in an air medium, especially during rain, fog and snowfall, and in an atmosphere polluted by dust discharges and smokes usually present on the battlefield, and so the effectiveness of employing laser-guided weapons is greatly reduced. Laser systems may prove to be entirely unsuitable under especially adverse weather conditions. Although not visible by the unaided eye, the emission of a laser designator in the infrared wave band reveals the designator and can be detected using special warning receivers. With timely detection the enemy can take steps to counter such weapons, such as by laying smoke screens and curtains or by illuminating decoys.

But the American press emphasizes that the results of tactical use of guided aerial bombs with semiactive laser guidance systems in Vietnam fully confirmed their chief tactical advantage of high accuracy in hitting the target. The circular error probable (CEP) of such aerial bombs is 3-5 m, and the guidance accuracy of guided missiles and projectiles can be even higher.

Beam-guided laser systems find use primarily for controlling the flight of antitank guided missiles [ATGM's] and light surface-to-air missiles [SAM's]. Their operating principle is as follows. The optical system on the launcher forms a laser beam with a special shape, such as cruciform or circular in cross-section. Using a sight the operator directs such a beam to the target

and keeps it on the target during the flight of the missile, which after launch automatically "enters the beam" and continues to fly in the direction of the laser beam's axis while receiving information from special sensors located in its tail section.

Foreign specialists note two chief advantages of such a guidance method. First of all, there is improved resistance to jamming. Inasmuch as the missile's sensitive sensors face in a direction opposite the direction of flight, the enemy cannot jam them. Secondly, there is the significantly higher missile flight speed compared, for example, with that of a wire-guided ATGM. Since in this case the flight time will be small (only a few seconds), a tank crew will not be able to take effective protective measures even if a launch is detected promptly.

Active laser guidance systems presently are being developed for air-to-air missiles. It is believed that their advantage over traditional infrared guidance systems will lie in higher antijam capability and higher accuracy.

The foreign press reports that studies also are being conducted abroad to develop other laser systems for guiding controllable weapons, particularly correlation systems which compare characteristic features of terrain or target images received in flight when the earth's surface is illuminated by laser emissions with features stored in the memory of an onboard microcomputer. At the present time, however, this work has not yet gone beyond the research stage.

Laser devices are used IN LOCATION for determining the range, the angular coordinates and target movement parameters, for remote sounding of the atmosphere, for obstacle detection and for measuring flight characteristics of airborne objects. They are divided according to operating principle into pulse and continuous wave devices. In the former distance is measured according to the delay time of a signal reflected from the target (measurement accuracy is within 10 m), and in the latter the speed with which objects move relative to the background is determined by special processing of a reflected signal based on the Doppler effect. Thus there is either a selection of moving targets or a determination of the true speed with which the platform is moving.

Lasers have begun to be employed above all as rangefinders in location. At the present time tank, artillery, airborne, naval and geodetic rangefinders have become operational in the armies of capitalist states. These instruments, used by forward observers as a means of artillery instrumental reconnaissance, have an operating range of 5-10 km. The result of measuring the distance to targets usually is sent to a digital display located in the field of view of an optical sighting device, and it can be input automatically to a ballistic computer of an automated fire control system. In comparison with optical base rangefinders and radar rangefinders, laser rangefinders [lidars] are much more compact and are lighter. Some models are no larger than conventional field glasses.

Two trends have been seen in their development. The first lies in the combining of a laser rangefinder and target designator in a single device, and the

second in providing a greater effective range under adverse weather conditions (fog, rain) and in a dusty atmosphere. Both trends are being implemented on the basis of the latest achievements of quantum electronics such as small carbon dioxide waveguide lasers with transverse electrical discharge and improved solid-state lasers. The former, for example, operate in the long-wave infrared band where emissions are less attenuated in the atmosphere. They are less dangerous for organs of sight of the attendant personnel. Their specific energy and operating characteristics presently have approached those of solid-state lasers.

The development of laser devices combining the functions of rangefinder and target designator, and possibly of other equipment as well in the future (such as a target illuminator for night vision devices), is being carried on in the United States in conformity with modern equipment standardization trends and, as American specialists believe, it confirms the advantages of such an approach to the development of new military equipment.

In comparison with rangefinders, laser location systems intended for determining the distance to an object, a target's angular coordinates and its speed, represent more complicated systems. The primary difficulties in their development are considered to be the solution to such problems as providing for the detection and tracking of a target with a narrow laser beam and eliminating the atmosphere's interfering influence (it not only attenuates emissions, but also disrupts their spatial coherence as a result of turbulence). The latter is especially important in the case where methods of coherent signal processing are applied in a lidar.

The first models of lidars developed abroad were used primarily for tracking friendly aircraft, missiles, other airborne targets and ISZ [artificial earth satellites] fitted with special reflectors of laser emissions during their testing. The mean-square error in determining angular coordinates was approximately $\pm 5''$ at a distance of 15-25 km. At the present time experimental models of lidars have been developed there which have the following purpose: tracking the nose cones of ballistic missiles on the final leg of their flight in the atmosphere and their selection against the background of decoys; detection and automatic identification of moving targets on the battlefield; support to low-altitude flights; detection of OV [toxic agents] in the atmosphere; and performance of meteorological measurements. In comparison with radars, lidars permit a substantial increase in the accuracy of measuring angular coordinates in these cases, forming target images without using synthesized aperture methods with acceptable sizes of the transceiving optical systems, measuring the speed of slowly moving targets (up to 1 km/hr), and determining very small differences in the speed of individual objects.

LASER AERIAL RECONNAISSANCE SYSTEMS bring together the basic advantages of photographic and television reconnaissance systems, i.e., high information content, the graphic effect of presenting intelligence about the enemy, and efficient data transmission. In addition, the systems provide an opportunity for conducting secret reconnaissance under nighttime conditions.

The operating principle of the laser aerial reconnaissance system is as follows. The terrain is illuminated together with reconnaissance targets by a narrow laser beam, which is deployed perpendicular to the direction of aircraft flight with the help of a special scanner. Reflected laser emissions are gathered by an optical receiving system with a radiation pattern which moves synchronously with the laser beam. Frame scanning is accomplished as a result of the aircraft's movement. The terrain image is registered on a photographic film or reproduced on a cathode ray tube screen in real time.

The foreign press notes that the information capabilities of laser reconnaissance systems increase with the use of multispectral laser devices and integrated processing of the reflected laser emissions. Structural materials, coatings, and natural and man-made objects have different reflection coefficients in different bands of optical wavelengths and change the polarization of reflected light in their own way. In this regard an opportunity appears, when using several lasers or a laser with retunable emission wavelengths, of automatically searching for objects made of a certain material or painted with an appropriate paint, detecting camouflaged objects against a natural background, and distinguishing true targets from decoys.

At the present time the United States already has adopted several models of aerial reconnaissance lasers which have a resolution on the order of several centimeters from an operating altitude up to 1,000 m and intended above all for use in tactical aircraft. The development of more sophisticated systems is under way.

Foreign specialists believe that LASER COMMUNICATIONS AND DATA TRANSMISSION SYSTEMS have two primary advantages in comparison with radio systems: narrow directivity of the emission and wide band width of the frequencies transmitted. The former practically precludes the possibility of intercepting information being transmitted (under certain conditions). The intercept of information from emissions scattered in the atmosphere is very complicated and requires special hypersensitive equipment. Because of the high frequency of optical emission ($3 \cdot 10^{14}$ Hz), it is possible to use a band of transmitted frequencies up to 30 GHz in laser systems, which is impossible in the radio band.

Just as in the radio band, two types of laser communications systems are distinguished based on the method of receiving the emission. They use optical heterodyne reception and direct signal detection. The effectiveness of heterodyne conversion is influenced by the propagation medium, which causes a loss of signal coherence and distortion of the wave's phase front. The medium's influence is insignificant with direct detection.

The structure of laser communications systems is determined by their purpose. In short ground lines preference is given to pulse systems with direct detection, inasmuch as they are less sensitive to atmospheric interference. Because of heavy attenuation (10-100 db/km depending on weather conditions) their operating range usually is limited to line of sight. Such systems find use in organizing communications among observation and command posts, ships and so on.

The advantages of long-range laser communications lines can be realized most fully in space. It is proposed abroad to develop satellite-satellite communications systems (for example, for prompt transmission of data between a reconnaissance satellite and relay satellite) and those systems which provide communications between a ground station and a satellite.

In recent years the United States has been especially active in developing a system of communications with submerged submarines via ISZ. It is believed that the use of special powerful lasers emitting in the blue-green region of the electromagnetic spectrum at wavelengths which are attenuated relatively little in sea water will provide communications with a submarine located at a depth down to several tens of meters.

Closed waveguide lines which will reduce laser energy losses are being developed to eliminate the effect of weather conditions on laser communications systems. The fiber-optic lines are considerably lighter than the superhigh frequency [SHF] lines designed to transmit comparable amounts of data, and they are more reliably protected against unauthorized access. The range for use of optical waveguide communications and data transmission lines is extremely broad. They are used in ground, shipboard and airborne missile and aircraft control systems for communications between radars and centralized data processing points and for organizing communications nets at the army tactical and operational-tactical level. Their advantages show up especially clearly where there is a need for increased operating reliability, since fiber lines are not subject to the induction and interference arising in ordinary cable lines, including from the electromagnetic pulse of a nuclear burst. It is planned to lay a transatlantic strategic communications cable, which is viewed as a reserve line of high reliability backing up the space communications channels presently in use.

Laser gyroscopes (used in inertial systems) which help determine reference directions on a moving object and to obtain information about an object's angular deflections from a given direction are finding increasingly wide use abroad FOR THE NAVIGATION of flying craft.

Compared with mechanical gyroscopes, laser gyroscopes have a higher sensitivity and are not subject to the effects of an object's mass or linear acceleration. They can operate at high rotation velocities of the object itself and with high stability. A very essential advantage from the standpoint of tactical employment is that they have a significantly lesser time of readiness for operation, 1-2 seconds, while it takes several minutes for the run-up of mechanical gyroscopes.

In the opinion of foreign specialists, the PROBLEM OF COUNTERMEASURES to electro-optical means of reconnaissance, surveillance and weapons control is becoming more and more pressing at the present time. This is caused by the constantly increasing number of such assets on the battlefield, by an expansion of the range of missions they accomplish, and by an increase in the effectiveness of tactical employment.

The principles of application of lasers for countering the operation of electro-optical means vary. For example, the armies of NATO countries plan to use them as the basis to develop repeater jammers of laser rangefinders, lidars, and communications and reconnaissance systems. A laser pod jammer is being developed for disrupting the guidance of infrared heads of air-to-air and surface-to-air missiles; it will be installed aboard aircraft. A laser emitter also can be used for illuminating decoys to confuse semiactive laser systems for guidance of missiles, controlled bombs and projectiles. Finally, lasers can create background illumination for the photodetector devices of electro-optical equipment, which corresponds to setting up barrage jamming in the radio band.

It is envisaged that the laser countermeasures device will include a special subsystem for searching for enemy optical systems, identifying them, and reconnoitering work modes for forming selective repeater jamming. The reconnaissance of active (emitting) equipment can be done on the emissions scattered in the atmosphere, and reconnaissance of passive means can be done by the method of laser sounding on the "hotspot," i.e., on the backscattering of emissions by optical system elements.

The development of effective countermeasures is hindered by the fact that the bulk of modern lasers emit at fixed wavelengths, which does not permit countering assets operating in different spectral bands. The development of lasers with a retunable wavelength has not yet reached the requisite level in emitted energy or in weight, size and operating characteristics.

THE USE OF LASER EQUIPMENT FOR TRAINING AND DRILLING personnel results above all from economic reasons. Experience indicates that in connection with the ever-increasing complexity of weapons and military equipment at the present time, there is a considerable increase in expenditures of time and assets for training and drilling personnel. It costs around \$250 to fire the standard round from the 105-mm gun, and the cost of launching a TOW ATGM is over \$4,000.

Laser devices not only permit simulating and monitoring fire from various individual and crew-served weapons, but also permits drilling the personnel at subunit level under near-combat conditions. The cost of one "round" from such simulators is less than one cent.

The set of MILES laser trainers developed in the United States is one of the most versatile such systems. Small laser semiconductor transmitters can be attached to rifles (Fig. 2 [figure not reproduced]), machineguns, the Dragon and TOW ATGM launchers, guns of the M60A1 tanks and other army weapons. In each specific instance the transmitter operates in an appropriate mode which simulates the process of a weapon's combat employment. To simulate the laying of a TOW ATGM, for example, the operator must hold the sight crosshairs on the target for the average flight time of the ATGM. The laser transmitter emits pulse bundles. Small-arms fire is simulated by the emission of a single bundle. Each pulse bundle contains code groups in a certain ratio corresponding to a target hit and a miss in accordance with the accepted kill probability

with the given kind of weapon. If the photodetectors on a target receive a preset number of "hit" code groups, then the "target hit" command is generated in the electronic control unit and the target's laser transmitter is switched off in accordance with that. The "target hit" signal can be transmitted simultaneously over a radio channel to a central EVM [electronic computer] serving the given range. The coded signal also contains information about which weapon fired the shot. This permits monitoring the current correlation of forces and assessing firing results during exercises.

The defocussing of a laser beam can be used to simulate a hit on a target by ammunition with a fragmentation effect or a near miss. In addition to a laser transmitter, each participant in an opposed-forces drill is equipped with a corresponding set of receivers of laser emissions. A varying kill probability corresponds to a laser emission falling on the photodetector elements of different groups.

There is the possibility of combining the laser's generation of a pulse bundle with the firing of blank cartridges, and a hit on target with a simulation of its ignition, with the appearance of smoke and so on to increase the illusion of real combat actions. There also are provisions for the transmitter of each firer to switch off automatically with the "total expenditure" of the authorized unit of fire.

American specialists believe that there are no limitations in use of such laser trainers. For example, it is planned to use the MILES set of laser transmitters (after their slight modification) to simulate actions of fire support helicopters and the conduct of air defense fire against them.

Activities conducted in the United States to teach personnel with the help of laser simulators demonstrated their high effectiveness, reliability and safety, as noted by the foreign press. It is believed that the effectiveness of the personnel's combat training can be increased considerably with the mass use of such means.

The aforementioned examples of course do not take in all possible spheres of application of laser technology in military affairs. Foreign specialists presently are studying promising directions in this area connected above all with the use of lasers as weapons. These matters will be examined in the next article.

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FOREIGN MILITARY AFFAIRS

SOUTH KOREA'S MILITARY INDUSTRY

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 11, Nov 84 (signed to press 10 Nov 84) pp 28-32

[Article by A. Samarskiy; passages rendered in all capital letters printed in boldface in source]

[Text] A prominent role is set aside for South Korea in the aggressive U.S. militaristic preparations in the Far East. South Korea is viewed by the Pentagon as an important link in the "strategic axis" of Washington-Tokyo-Seoul being knocked together and as a springboard for an attack against the Soviet Union and other countries of the socialist community. Judging from foreign press reports, there are some 40,000 American servicemen and a large quantity of combat equipment stationed here, including nuclear weapons delivery capabilities.

White House contacts with Tokyo and Seoul have become more frequent in recent times, joint exercises are held annually and military-economic ties are expanding for the purpose of strengthening the United States-Japan-South Korea military-political alliance. It is the U.S. strategic interests which explain the build-up in its satellite's military might and the stimulation of the establishment and development of South Korea's military industry. An analysis of events of the period of war in Korea during 1950-1953 made by foreign specialists showed that the country's devastated economy at that time was unable to provide the necessary repair and reconstruction base either for the interventionists or the South Korean Armed Forces. By war's end only two plants for the production of small arms and ammunition remained in the south.

U.S. plans to retain a long-term military presence in South Korea envisaged a strengthening of the role of the puppet regime's armed forces and wider use of local resources for their logistical and material-technical support. To this end American "military aid" programs began to be carried out in 1953, under which a considerable portion of the funds was allocated to the restoration and construction of industrial enterprises, but establishment of South Korea's own military industry began only in the late 1960's.

By this time a trend toward the formation of a military-industrial complex became distinct in South Korea. Not having the necessary social support, the

dictatorial regime of Pak Chong-hui flooded the state apparatus as well as managing bodies of industrial companies and firms with its own people. Retired officers and representatives of the big bourgeoisie integrated into the military-bureaucratic leadership took over some three-fourths of the responsible posts. The dominance of militarists in state and economic life led to the constant fanning of a militaristic hysteria. In the mid-1960's for example annual military expenditures comprised four percent of the gross national product [GNP] and 20-25 percent of the budget. At the present time their proportion has increased to 6-6.5 and 30-35 percent respectively.

The first plan for "development of the defense industry" of South Korea was adopted in 1968. In addition to the expansion of capacities of existing military plants and construction of new ones, it provided for the transfer of unprofitable state enterprises to the private sector, which alleviated the strain on the budget and simplified a number of organizational matters. To stimulate the local bourgeoisie the regime granted it considerable benefits and guarantees for orders. Big capital was not slow in accommodating. For example, the Korea Explosives Company redeemed a former military plant in the city of Inch'on from the authorities, quickly restored production and as early as 1970 it was providing the South Korean Army with almost 100 percent of its cartridges and explosives.

In the late 1960's a joint American-South Korean commission drew up measures for strengthening the might of the South Korean Armed Forces for the period of 1971-1975 (primarily through help from the United States in an amount of \$1.5 billion). One of the measures was an accelerated build-up in the military-industrial potential. Later these measures began to be called five-year modernization programs. A decision was made about arms deliveries when the first such program was being carried out in 1973. The decision provided for establishment of a special fund and the granting of subsidies and tax and other benefits in the interests of developing the war industry.

In 1975 the South Korean Joint Chiefs of Staff worked out a comprehensive five-year program for modernization of the armed forces (1976-1980). It included some 130 subprograms, the chief of which comprised a build-up in the number of the latest models of arms among the troops, an expansion in the network of infrastructure facilities and development of the war industry so as to begin mass production of all kinds of weapons, military equipment and ammunition by 1981, except for warplanes and nuclear weapons.

Five billion dollars were appropriated for financing this program, with some 30 percent of this amount made up by U.S. "military aid." The Seoul regime instituted an additional "defense" tax amounting to 18.5 percent of all income of the population, companies and enterprises, which was to ensure the receipt of 1.5 trillion won (around \$3.1 billion) and thus provide the economy with currency. The first public demonstration of weapons and military equipment of South Korean manufacture was held in 1978. Tactical surface-to-surface missiles, helicopters, tanks, field and antiaircraft artillery pieces, multiple launch rocket systems and other models were represented at a parade of puppet troops in Seoul.

The new program for modernization of the armed forces (1982-1986) envisages the transition of industry to series production of warplanes, ship of the primary types and tanks of South Korean development, as well as a build-up in the output of developed models of weapons and military equipment not only for its own armed forces, but also for export. The program's ultimate goal is to support the army's current needs practically completely by 1990 through its own military-industrial base. There were \$1,095,000,000 appropriated for implementing the program, of which \$150 million were for development of military production and \$113 million for R&D.

At the present time the defense industry directorate of the ministry of defense, which plans and monitors the manufacture of weapons and military equipment and their delivery to the troops, exercises direction over arms production. In addition, it coordinates the work of involved civilian companies and enterprises through the association of military contractors of South Korea, the board of which includes the heads of very large industrial associations and firms.

The process of capitalist industrialization in the 1970's contributed to the establishment of the war industry inasmuch as more and more civilian enterprises of the metallurgical, chemical and machinebuilding sectors were involved to one extent or another in carrying out armed forces modernization programs. By the early 1980's some 100 companies already were participating in military production and their output satisfied half of the army's needs for weapons and combat equipment. The foreign press reports that South Korea now is capable of instituting a state of general mobilization under extraordinary conditions.

The establishment of military industry in South Korea made it necessary to expand the scientific-technical base. The ministry of science and technology established in 1967 elaborated a 20-year development program. In accordance with the program the proportion of capital investments for R&D rose from 0.6 percent in 1971 to 1.5 percent in 1981 in the overall volume of the GNP, and is to increase to 2.5 percent in 1991.

According to foreign press data, South Korea is experiencing a shortage of scientific-technical cadres for now, but their numbers are constantly growing. While there were 13,000 scientific workers in 1978, there already were 19,200 in 1980 and by 1991 it is planned to bring their number to 50,000. Nevertheless, the demand for scientific cadres is outstripping their rate of training (a shortage of some 30,000 scientific workers is expected by 1991), and so foreign specialists are being widely enlisted for participation in R&D.

In 1980 South Korea had some 700 scientific research organizations, the primary ones being the Institute of Science and Technology, the Atomic Energy Institute, the Shipbuilding and Oceanology NII [Scientific Research Institute], and the Aviation Technology Institute. A special NII was formed to raise the level of military R&D. It took over and is coordinating the work of all scientific centers engaged in developing weapon systems. The chief results of this establishment's work is the development of a medium tank,

free-flight rockets and a tactical surface-to-surface missile. The majority of developments already have been placed in production. In the opinion of foreign observers, South Korea has a significant scientific potential capable of assuring a further militarization of the economy.

The AVIATION INDUSTRY is represented by an aircraft assembly plant of the Korean Air Lines [KAL] company located in the city of Kimhae, and by several auxiliary enterprises. By agreement with the American firm of Hughes Helicopters, production of the 500 MD Defender combat helicopters has been carried out at the KAL plant since 1978. The first lot included 75 helicopters with cannon-machinegun armament and 25 with the TOW ATGM. Even before completion of production on the lot, a new contract was concluded in 1980 for the manufacture of 48 machines and, somewhat later, for another 20 helicopters. The rate of output is 4-5 machines monthly. The proportion of locally produced assemblies and units in the manufactured products is 40-45 percent and is gradually increasing.

In October 1979 KAL concluded an agreement with the American Northrop company for joint production of 68 F-5E and F-5F fighters (Fig. 1 [figure not reproduced]). The deal was worth \$104 million. The first aircraft (local designation Chegoong) was assembled and tested in 1982. Completion of the program is planned for 1986. The maximum output rate will be two machines per month. As in the case with the helicopters, production is oriented toward a gradual transition to the manufacture of individual parts, assemblies and units in South Korea. Fuel tanks and parts of the undercarriage and fuselage already are being manufactured, and some of them are being delivered to the Northrop firm in the United States. Jet engines for these aircraft are being produced at a plant of the South Korean Samsung Precision Industries company in the city of Masan. More than 20 percent of the aircraft's parts and assemblies presently are being produced locally.

In addition, South Korean aircraft plants are being used for major overhaul of combat aircraft both of their own air force and of the American Air Force (until recently the latter were repaired on Taiwan). According to a report of the Hong Kong newspaper ASIAN WALL STREET JOURNAL, KAL also is producing the multipurpose UH-1 Iroquois helicopters.

The PRODUCTION OF MISSILE WEAPONRY in South Korea began in the mid-1970's. In 1975 a solid-fuel engine plant was purchased from the American concern of Lockheed Aircraft. As a result of the deal, worth two million dollars, machine tools and industrial equipment of the liquidated plant of the Lockheed Propulsion Company were shipped from the city of Redlands, California to the eastern part of South Korea. As early as 1978 there were tests of a surface-to-surface guided missile with an operating range of 150 km, a surface-to-surface NUR [free-flight rocket] with a range up to 35 km (Fig. 2 [figure not reproduced]), an air-to-air UR [guided missile], an ATGM and a multiple launch rocket system [MLRS] (Fig. 3 [figure not reproduced]). Tactical missiles, ATGM's and MLRS's presently are being manufactured under licenses, and entirely from local assemblies and parts, including electronic guidance systems.

In 1982 South Korea's SHIPBUILDING took in 327 enterprises with a total capacity of four million tons of ships built and nine million tons repaired per year. The largest companies were filling naval orders for building ships, motor patrol boats and auxiliary vessels. In 1980 the first URO [guided missile] frigate with a displacement of 1,600 tons, commissioned in the navy in late 1981, was built at the yard of the Hyundai Business Group association in the city of Ulsan. Construction of another three ships of this class was postponed for an indefinite time due to financial problems. The yard presently is producing motor patrol boats with a displacement of 100-200 tons.

The South Korean-American company of Korea Tacoma International in the city of Masan (up to 1979 it bore the name Korea Tacoma Marine Industries) specializes in the production of warships. Its first product comprised PSM-5 Type guided missile patrol boats (with a displacement of 250 tons) and CPIC Type motor patrol boats (71 tons). The company now is mastering the production of new models: a corvette (small ASW ship) of the KCX design, tank landing ships with a displacement of up to 2,000 tons, as well as submarines under an Italian license. It also fills export orders for guided missile patrol boats and tank landing ships for Indonesia and Thailand.

The Korea Shipbuilding and Engineering company (city of Pusan), which builds motor patrol boats, is the third major supplier of the navy.

Shipbuilding is a very promising sector of the military industry, inasmuch as South Korea is carrying out a program to replace obsolete ships and is counting on the sale of naval equipment to developing countries.

The ARMORED INDUSTRY was formed on the basis of the automobile making sector. South Korea has three assembly plants which produce tanks, armored personnel carriers and various vehicles for the armed forces. Modernization of the M47 and M48 tanks of American production began in the ground forces in the mid-1970's and included a replacement of gasoline engines with diesel engines, installation of modern sights, and so on.

The sets of components necessary for this were supplied from the United States, but some 30 percent of components were made locally. The skills acquired were used in the test production of M48A5 tanks and in the development of South Korea's own tank, the Model 40-t (Kokhema).

The Hyundai Heavy Machinery Industries is the lead company in tank building. The casting and rolled stock comes from a metallurgical combine in the city of P'ohang to an assembly plant of the industrial complex (city of Changwon). The 105-mm guns for these tanks also are produced there, but at another plant of the company. Production capacities are assessed at 30-40 machines per year. It is planned to begin series production in 1984.

In 1977 the production of the Fiat-6614 wheeled armored personnel carrier began in South Korea under a license from the Italian firm of OTO-Melara. Participating in the production are the companies of Korea Integrated Steel (armor plate and partial assembly of hulls, city of Masan), Kia Industrial

(hull assembly, city of (Skhanvon)) and Asia Motor (engines, undercarriage and final assembly, city of Kwangju). The output rate is 8-9 APC's per month. The production capacities for output of trucks and other military vehicles are assessed at 20,000 units per year. The Armed Forces' requirements for means of transportation are satisfied fully by local production.

The output of armored and vehicular equipment by South Korean companies provides a significant saving of foreign exchange funds. For example, economists assessed the production cost of an improved model of the M48A5 at \$320,000, while the import costs of a similar American-made M60 tank was \$600,000. In addition, South Korean industrialists are counting on the possibility of exporting their products to developing countries.

PRODUCTION OF ARTILLERY AND SMALL ARMS AND AMMUNITION was the basic sector of South Korea's military industry up until the mid-1970's. The pilot enterprise is an arsenal in the city of Pusan which manufactures 5.56-mm rifles and machineguns, 60-mm and 81-mm mortars, 40-mm rocket launchers as well as certain kinds of ammunition.

The number of enterprises in this sector increased in recent years. Artillery weapons are produced by a plant of the Korea Heavy Machinery Industries company in the city of Changwon. Its products include 105-mm and 155-mm howitzers, 105-mm tank guns, 90-mm and 106-mm recoilless guns, 60-mm, 81-mm and 106-mm mortars, as well as 40-mm rocket launchers.

A plant of the (Tonil') Industries company in the city of Masan manufactures the Vulcan 20-mm six-barrel guns (Fig. 4 [figure not reproduced]) for self-propelled air defense mounts, Browning M2HB 12.7-mm machineguns and 40-mm rocket launchers under an American license. The companies Gold Star (city of Seoul), Korea Integrated Steel, cities of Masan and Ulsan), Oriental Precision (city of Songnam) and others also are engaged in producing these models of artillery and small arms.

In addition to the Pusan arsenal, ammunition is produced by the companies Korea Explosives, Poongsan Metal Manufacturing (both in the city of Inch'on), National Plastic (city of Tonghae) and others. Their products list includes cartridges, shells, antitank and antipersonnel mines, 227-kg aerial bombs, explosives, powders and pyrotechnic equipment in the South Korean Army inventory. Some companies produce chemical munitions, such as the firms of Samyan Chemical (city of Anyang) and National Plastic (city of Tonghae), and they manufacture tear gas and other OV [toxic agents].

South Korea's ELECTRONICS INDUSTRY takes in more than 440 enterprises manufacturing electronic instruments and their parts. The production of radios, radar equipment and military gear has been mastered. The primary suppliers of these products are (Dzhese) Industries, (Yubun) Gold Star, (Sekhan) Industries, (Synyan) Electronic Industries (all in the city of Seoul), (Iaksor) Electronics (city of Chongju) and Oriental Precision (city of Songnam).

The electronics industry depends to a considerable extent (25-30 percent) on the import of modern technology and certain kinds of raw materials and supplies. It is assumed that during the 1980's the sector will be able to move to the level of fully meeting the army's needs for electronic equipment.

PRODUCTION OF UNIFORMS AND MILITARY GEAR both for the domestic market and for export is accomplished by the companies of (Khanyan) Trading, (Dzhese) Industries, (Tedon Pondzhe) (all in the city of Seoul), Kohap (city of Anyang) and others.

As the foreign press notes, South Korea managed to move into one of the first places among Asian countries in a little over ten years in the level of development of military industry. Its development is subordinated to objectives of preserving the regime of military dictatorship and supporting U.S. military-strategic interests in the Far East. Japan, Italy, the FRG and (as arms buyers) a number of developing countries also were included as South Korean partners in preserving a primary orientation toward cooperation with the United States.

The colossal amounts of funds and resources allocated for the accelerated build-up in military production permit satisfying more than half the needs of the South Korean Armed Forces, and this proportion will rise in the near future. A further development of South Korea's military industry will be a factor of increased tension on the Korean peninsula and throughout the far-eastern region.

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FOREIGN MILITARY AFFAIRS

U.S. ARMORED DIVISION IN THE ATTACK

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 11, 1984 (signed to press 10 Nov 84) pp 33-38

[Article by Col A. Yegorov, candidate of military sciences, docent; passages rendered in all capital letters printed in boldface in source]

[Text] In readying their Armed Forces for war against the USSR and other countries of the socialist community, U.S. militaristic circles and military leaders are placing considerable emphasis on building up the combat might of the armored troops, which are the Army's chief shock force and an important means for achieving success in ground operations under conditions of employment both of nuclear and conventional weapons. Proof of this is their outfitting with modern combat equipment and precision weapons, the testing of a new unit organization, and exploration of the most effective methods for conducting combat actions.

As the western press notes, the armored division is the basic tactical unit of the U.S. armored troops, which includes units and subunits of various combat arms and services and is capable of fighting both as part of an army corps and independently. It has great shock force and firepower, it is highly mobile, it is best adapted for fighting under conditions of modern warfare and, in the opinion of American military specialists, it is capable of making swift attacks and of splitting up and destroying enemy troops.

The foreign press emphasizes that over the last several years the organization and establishment of armored divisions has undergone substantial changes, the purpose of which was to increase mobility and the flexibility and efficiency of controlling combat units, and to produce a quantitative and qualitative improvement in combat and logistical support units and subunits.

Organizationally the armored division includes a command element and headquarters, headquarters company, three brigade headquarters with headquarters companies, six tank and five mechanized battalions, three 155-mm and one 203.2-mm self-propelled howitzer battalions, a Chaparral-Vulcan air defense battalion, five battalions (reconnaissance, intelligence and electronic warfare [EW], army aviation, signal, and engineer), a support command (three battalions: transport and supply, maintenance, medical) as well as two companies (nuclear, biological, and chemical [NBC] defense, and military police).

The division's basic combat subunits are the tank and mechanized battalions. They are brought together into brigades for the time of combat actions and for an exercise period; each brigade can have from two to five different battalions as well as support subunits.

As the foreign military press reports, the division has a total of some 18,300 persons. Its inventory includes 360 tanks, 12 203.2-mm howitzers, 54 155-mm howitzers, 53 106.7-mm mortars, 45 81-mm mortars, 90 TOW ATGM launchers, 735 Dragon ATGM launchers, 85 66-mm four-tube rocket launchers, 24 Chaparral surface-to-air missile [SAM] launchers, 24 Vulcan 20-mm six-barrel self-propelled air defense mounts, 146 army aviation helicopters (including 42 armed with the TOW ATGM), 72 Redeye portable SAM systems, around 680 armored personnel carriers [APC's], and 2,750 vehicles.

In the assessment of the U.S. Army command, the armored division is a unit most adapted for fighting under conditions of NBC employment. It is capable of inflicting considerable damage on the enemy with all weapons in its inventory, attacking at a high tempo, constantly pressuring the enemy or destroying his personnel, weapons and combat equipment, and taking important objectives in his defensive depth.

American military specialists believe that success in a modern operation, especially in the initial period of war in a TVD [theater of military operations], can be achieved through the decisive and simultaneous destruction of the enemy to the full depth of his troops' operational alignment with nuclear, chemical, precision and conventional weapons. The employment of such weapons is coordinated and integrated by a plan which is common to the combat actions of ground troops and tactical aviation.

These provisions were reflected in a new operational concept for the ground forces entitled "Airland Battle."* According to this concept, an armored division operating as part of an army corps will participate in an offensive airland operation, with its basic methods to be worked out as the command and control systems are perfected and as the troops receive modern armament.

The basic component of this concept is the "deep defeat" of the opposing grouping, the purpose of which is to create more favorable conditions for the units and subunits which are fighting to complete the defeat of the enemy first echelon and prepare for subsequent actions against his second echelons. The weapons which the division has to carry this out are field artillery pieces, multiple launch rocket systems, fire support helicopters and remote mining systems. Tactical aviation may operate in the division's interests, and operational-tactical missile strikes also may be delivered.

In the American command's views, the offensive is the primary form of combat actions, since it is only at this time that one can achieve decisive goals of

*For more details see ZARUBEZHNOYE VOYENNOYE OBOZRENIYE, No 7, 1984, pp 29-35—Ed.

defeating the enemy and capturing important objectives and terrain areas. It is believed that the offensive creates favorable conditions for imposing one's will on the enemy, for seizing the initiative and for taking advantage of the enemy's weak points.

American regulations note that depending on the troop status and existing situation, the offensive may be organized and conducted hastily or with deliberate preparation. In the first instance it usually is carried out when units are advancing out of the depth to an initial line. It is recommended that it be organized against an enemy who had assumed a hasty defense, who is inferior in combat effectiveness and mobility, and who has not succeeded in establishing a fire plan and arranging coordination. Military specialists affirm that surprise is achieved and losses from defending enemy fire are reduced in an attack from the march.

In the second instance troops usually assume the offensive out of a position of immediate contact with the enemy. Under these conditions the troops' preparation for an attack is conducted in the areas and positions they occupy, which actually are the initial line. The regulations emphasize that this method usually is employed when the attack has been preceded by a defense.

According to American regulations the basic forms of maneuver in an offensive are the frontal attack, breakthrough, envelopment and infiltration. It is believed that the choice and execution of a maneuver must provide a more favorable friendly troop situation in comparison with the enemy and rapid closing with him in order to inflict damage on him and deprive him of an opportunity for further resistance. In this connection the division commander is required to make a proper choice of the form of maneuver which would assure him mission accomplishment with minimum losses and in the shortest possible time and which would facilitate the conduct of further offensive actions.

The American press suggests that the armored division can fight as part of the army corps, in its first or second echelon and on a main or secondary axis. In an offensive involving use of mass destruction weapons, the armored division is recommended to be in the first echelon on the corps axis of main attack with the objective of penetrating the defense from the march and exploiting success into the depth. In an action in the second echelon, it is deemed most advisable to commit the division after the corps' immediate mission has been accomplished.

Foreign specialists emphasize that operational-tactical norms for the division in offensive combat depend on the specific situation, nature of terrain, the combat effectiveness of its units and assigned means of reinforcement and support, the enemy's composition, the extent to which his defense is prepared, and on other conditions. In addition, the width of the division's zone and the depth and content of its missions in the offensive are determined by the amount of nuclear weapons employed to support division combat actions.

The foreign press reports that the armored division's place in the army corps combat formation is determined by its mission. Therefore the armored division

may receive, as forces and assets of reinforcement, some 50 nuclear weapons, 2-3 battalions of 155-mm self-propelled howitzers and up to two battalions of 203.2-mm self-propelled howitzers (from the corps field artillery brigade), 1-2 engineer battalions, 1-2 reconnaissance battalions (from the corps armored cavalry regiment) and one antitank helicopter battalion (from the corps antitank helicopter brigade). It may be assigned some 100 tactical air sorties for close air support in 24 hours of combat actions, and sometimes even more, of which 10-20 are for reconnaissance.

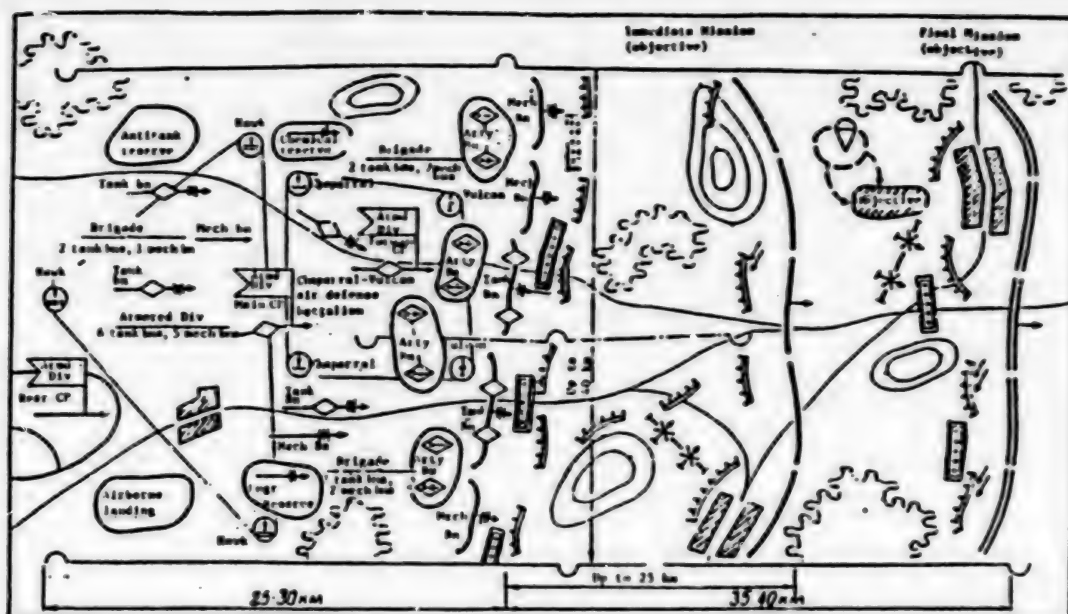
In the offensive the combat mission of a division operating in a corps first echelon is divided into an immediate and final mission (or immediate and final objectives, which are taken to mean enemy troops, enemy defensive positions, reinforced populated points, water lines, important installations, terrain sectors, and so on). An immediate mission may consist of a penetration of the main enemy defense zone and capture of a line or objective at a depth of up to 25 km; the final mission may consist of completion of a breakthrough, capture of a line or objective at a depth of 35-40 km from the forward edge, and establishment of conditions for commitment of the corps second echelon or reserve. The brigade's immediate mission is up to 10 km and its final mission is 20-25 km, while for the battalion it is 4-5 km and 8-10 km respectively.

In addition to a combat mission, the corps commander designates zones of combat action and potential threat for the purpose of quality planning of combat actions and coordination of fire and maneuver. The zone of combat action represents a belt of terrain from the line of contact of the sides in the direction of the enemy (a depth of up to 70 km) within which enemy objectives (targets) are subject to detection and destruction by the division commander's forces and assets. The potential threat zone is beyond the zone of combat action. It contains subsequent enemy echelons (reserves) whose approach and commitment may substantially affect the division's combat actions (the zone's depth is up to 80 km).

An armored division's zone of attack may be up to 40 km wide or, if it is operating on the axis where the corps' basic efforts are concentrated, then it is 20-30 km wide (a brigade attacks in a zone of 8-10 km and a battalion in a sector of 3 km or more).

The rate of attack may be 20-25 km in the tactical depth and up to 80 km in the operational depth. It is believed that when an attack is conducted without the use of nuclear weapons, the depth of missions and rate of attack may be 1.5-2 times less than those given.

The combat formation of the division and its units in the attack (see diagram) depends on the assigned mission, availability of forces and assets, width of the zone of attack, expected enemy resistance and nature of the terrain. It is recommended that the combat formation be aligned so as to provide flexible and reliable control of the units and subunits in combat, superiority over the enemy in forces and assets, and rapid, effective exploitation of the results of nuclear strikes. An armored division can attack with a combat formation in one, two or sometimes even three echelons.



Combat formation of U.S. armored division in the attack
(variant)

A single-echelon alignment is used when attacking across a broad front against a relatively weak defense of the opposing side, where the situation does not require establishment of a strong reserve and where rather complete information is available on the enemy. In the opinion of American military specialists, this permits making complete and simultaneous use of the division's firepower and shock force. In this instance the brigades usually align their combat formation in two echelons, with the bulk of the tank subunits in the first echelon. It is planned to have one or two mechanized or tank battalions in the division reserve.

A combat formation in two echelons is considered the most typical in modern combat. The first echelon is for penetrating the defense and executing the division's immediate mission. It usually is formed by two brigades (3-4 tank and 3-4 mechanized battalions) with means of reinforcement, in which battalion tactical groups usually are formed. The second echelon (one brigade) is recommended for use to exploit success and execute the final mission, and to repulse counterattacks and reinforce or replace first echelon units which have lost combat effectiveness. It has one or two tank or mechanized battalions.

A combat formation in three echelons, i.e., all three brigades echeloned one after the other in depth, is recommended primarily in those cases where there is little information about the enemy and the nature of terrain and features of the enemy defense force the division to attack in a narrow front. This will be used very rarely, however, in the opinion of foreign specialists.

In conformity with American regulations, the elements of an armored division's combat formation also include a combined-arms reserve (if the combat formation is in a single echelon), groupings of division artillery and air defense weapons, and special reserves: antitank (antitank helicopter subunits), engineer

(one or two combat engineer companies), chemical (an NBC defense company), and tactical airborne force (1-3 mechanized companies), when its use is planned. Based on the experience of a number of exercises where problems of offensive actions were practiced, the depth of the armored division's combat formation reached 25-30 km and sometimes even more.

The American regulations note that there are four basic phases of offensive actions: movement to contact, the offensive itself (from the march or prepared in advance), exploitation of success, and the pursuit.

The MOVEMENT TO CONTACT with the enemy has the purpose of achieving or restoring immediate contact with the enemy. It is carried out secretly and includes the division's swift advance in march (sometimes approach march) formations and the rapid deployment of its units for the offensive.

The OFFENSIVE ITSELF (the penetration) may be accomplished from the march or after advance preparation. It usually includes the concentration of forces and assets on selected axes, fire preparation and fire support of the attack, delivery of the attack and destruction of the defending enemy.

In the views of military specialists, EXPLOITATION OF SUCCESS follows a successful attack and begins from the moment the enemy is incapable of holding his positions. The primary objective here is to deprive him of an opportunity to restore the integrity of his defense or carry out an organized withdrawal.

Being the concluding phase, the PURSUIT begins from the moment the enemy begins to leave his defensive positions across the entire front. Its purpose is to split up and destroy the retreating enemy through continuous pressure on his main body, by interdiction of its withdrawal routes and its destruction.

The foreign press emphasizes that an attack from the march is most suitable under present conditions inasmuch as troops retain their mobility and are capable of going quickly deep into the enemy rear before he establishes an organized defense. In this case a division may advance from the depth immediately to a line of departure and be committed from the march without stopping or from an assembly area occupied first for a short time and located 30-80 km from the front line.

The division may advance from the assembly area along 3-4 routes, most often with two brigades in the first echelon and one in the second (or reserve). The first echelon brigades proceed along one or two routes, initially deploying into approach march formations, then into combat formations. During the movement to contact, American regulations state that the division main body must not be committed; it is recommended that it advance swiftly in columns with reconnaissance entities and covering and security forces in front.

Foreign military specialists believe that an armored division's move into the attack usually is preceded by fire preparation using nuclear, chemical and conventional weapons or only conventional weapons. In this period not only is the enemy neutralized and destroyed, but division units also maneuver to

concentrate necessary forces and assets on chosen axes to achieve the requisite superiority over the defenders. In conducting an offensive using conventional weapons, this superiority is envisaged in a narrow front (a penetration sector of 3-6 km) and on the axis where enemy defense is most weakly organized.

Nuclear strikes are planned for delivery against the enemy's means of nuclear attack, strongpoints, command posts, communications centers, locations of reserves, and other important objectives. Following such strikes it is recommended that massive tactical air strikes and artillery fire be conducted against targets which were not subjected to nuclear strikes and where centers of resistance have been preserved, especially on the axis where main efforts are concentrated.

Judging from foreign press reports, fire preparations employing nuclear weapons may last 20-30 minutes, or 40-50 minutes (at times even more) with only conventional weapons employed. During fire preparation the division main body advances to the line of attack so as to arrive there 2-3 minutes before the end of fire preparation. Proceeding along their routes to the line of attack, the first echelon brigades deploy successively into battalion columns (8-12 km from the forward edge), company columns (5-8 km from the forward edge) and platoon columns (2-3 km from the forward edge).

When the troops move into the attack the fire of division artillery and supporting weapons shifts into the depth of the enemy defense to give close support to the attacking troops by destroying targets hindering their advance, by conducting counterbattery fire and by screening flanks and intervals in combat formations with fire.

If the division is in immediate contact with the enemy, then the positions held by the enemy are the initial line for the attack. In this instance, in view of the division's great dispersal laterally and in depth, it is planned to assign the units and subunits different initial lines for the attack where necessary, but it is recommended that the forward edge of defense be attacked simultaneously by all advancing first echelon units.

According to American regulations, the offensive must be decisive and be conducted at a fast pace from objective to objective. It is noted that first echelon units should not be diverted for executing secondary missions. For this reason the first echelon brigades must advance as quickly as possible to disrupt the integrity of the enemy defense without becoming engaged in protracted fighting and while bypassing centers of resistance. Missions of eliminating individual centers of resistance are assigned to second echelon subunits (reserves).

Depending on the situation, an offensive may assume the form of a simultaneous and swift advance of the division first echelon until execution of assigned missions, or the offensive will be conducted from objective to objective. It is recommended that the units and subunits advance as quickly as possible in combat formations, and more frequently in approach march formations, between

centers of resistance. While conducting offensive combat the brigade and battalion commanders are given broad initiative in actions. After taking the defense areas of enemy first echelon subunits, the tank and mechanized battalions work closely with each other in continuing to develop a nonstop attack into the defensive depth for the most rapid penetration of the subsequent positions.

According to views of the U.S. Army command, high rates of a division attack can be achieved through the decisive actions of its attacking units, through continuous and intensive artillery and air support, and through timely commitment of second echelons or reserves. After brigades execute immediate missions it is planned to commit their second echelons rapidly, chiefly into the intervals or from behind the flanks of the first echelon units.

The division second echelon (reserve) moves in approach march formations in constant readiness for combat. Its commitment is recommended most often following the division's execution of the immediate mission in order to develop the attack and build up its tempo. The deployment and commitment usually are supported by actions of the first echelon brigades, by the fire of artillery and fire support helicopters, and by air strikes, and nuclear strikes may be delivered against the most important objectives in the direction of the second echelon's actions. The division second echelon usually is committed in the intervals between first echelon brigades or through their combat formations, after which it is recommended that the second echelon be restored quickly, using several battalions which have been taken out of action or one of the brigades attacking in the first echelon.

Execution of the division's final mission is achieved through the swift combined actions of its second echelon and of first echelon units. Special emphasis is placed on repulsing counterattacks by the defending enemy's tanks while this mission is being accomplished. In this connection it is recommended that ATGM systems, tanks, antitank helicopters and artillery be used extensively. It is believed that a repulse of enemy counterattacks must not sharply reduce the rates of attack.

American military specialists emphasize that the mission assigned an armored division may change during an attack in accordance with the situation at hand. If success cannot be achieved in one sector, the main attack should be shifted to another sector where there are favorable conditions for conducting a successful offensive.

After execution of the final mission a division may consolidate on the captured line and by its actions support commitment of the army corps second echelon (reserve), or it may receive a new mission for a further attack independently or together with the corps second echelon.

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FOREIGN MILITARY AFFAIRS

NEW VERSION OF RAPIER SURFACE-TO-AIR MISSILE SYSTEM

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 11, Nov 84 (signed to press 10 Nov 84) pp 43-44

[Article by Col V. Viktorov]

[Text] In the course of militaristic preparations Great Britain is placing considerable emphasis on the development of weapons against the air enemy. For example, the firm of British Aerospace is developing a new version of a close range surface-to-air missile [SAM] system, codenamed Laserfire Rapier, under contract with the country's ministry of defense. Its primary distinction from the existing version is that a laser device is used for automatic tracking of airborne targets. According to a foreign press report, this permits an improvement in missile guidance accuracy and elimination of operator mistakes arising in manual target tracking using an optical device.

The new system is not all-weather, but it can fire with a rather high degree of automation at any time of day and hit targets at distances up to 6 km and at altitudes up to 3 km. It takes around three minutes to deploy from a traveling to a combat position. The launcher is reloaded manually.

The chief elements of the Laserfire Rapier are a modernized airborne-target search radar, laser device for automatic target tracking, EVM [electronic computer] for data processing, launcher with four missiles, and shelter for the combat team (two persons) with appropriate control and display panels.

All elements of the system (which has an overall weight of two tons) are installed in a separate module accommodated on a rotating platform, which in the fixed version is placed directly on the ground and, in the mobile version, on a 3-4 ton vehicle or trailer. The module is 3.3 m long, 2.4 m wide and 1.9 m high. The SAM system can be moved by air in the C-130 Hercules military transports or on external attachment points of the Chinook helicopter.

The system was displayed at the 1983 international aerospace show at Le Bourget, France, mounted on a four-ton vehicle of the Bedford firm (with a 4x4 wheeled configuration) with a forward-tilting, collapsing cab, making it possible to conduct fire in practically any direction in azimuth (see figure [figure not reproduced]).

The airborne-target detection radar, which operates in the millimeter wave band, is capable of detecting targets flying at altitudes up to 3 km and at ranges up to 10 km. As British specialists note, the highly directional radar beam provides a rather high resolution and the receipt of accurate data on the target's bearing and angle of site. In their opinion the radar has a high degree of antijam capability against enemy means of electronic warfare.

The laser device for automatic target tracking is accommodated on a gyrostabilized platform and as a result there is no need for leveling the vehicle containing the SAM system. The laser device consists of two parts: an automatic laser target acquisition and tracking device, and a missile-tracking television set coupled with it. Both parts have common optical channels.

The western press has reported that with the help of microprocessor technology the SAM system's developers managed to automate the system's work from the moment of target detection right up until target destruction. In this operating mode the combat team's actions reduce merely to pressing the missile launch button when the target enters the launch zone.

When the radar detects an airborne target the SAM system rotates toward it. The laser device locks on the target, then the tracking mode is activated and all information about the target's coordinates enters the EVM. After the missile is launched there is automatic target tracking using the television set and the target's deflection from the laser beam is measured. The EVM converts these data into control commands sent to the missile via a digital communications unit.

The cab of the Laserfire Rapier SAM system has two console displays. One of them shows in alphanumeric form the information about target coordinates received with the help of the acquisition radar, as well as identification friend or foe signals. The second display reproduces a picture from the television device for confirming target lock-on and destruction. The operator can use this display to identify the target visually and if necessary to direct the laser beam of the tracking device to the target manually.

The SAM system shifts to an automatic operating mode with the beginning of target illumination. If necessary the team commander can perform tracking using the auxiliary optical sight. He can also interrupt the system's automatic work mode and switch the system to engage another airborne target.

It is planned to begin range testing of the Laserfire Rapier SAM system in 1984, with the performance of actual firing. The foreign press notes that when the system becomes operational (which is expected during 1986-1987), there will be a noticeable improvement in the troops' tactical capabilities to combat the airborne enemy.

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FOREIGN MILITARY AFFAIRS

NATO'S OFFENSIVE AIR OPERATION

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 11, 1984 (signed to press 10 Nov 84) pp 47-54

[Article by Lt Col V. Lakhvin: "The Offensive Air Operation (Based on Views of NATO Military Specialists)"; passages rendered in all capital letters printed in boldface in source]

[Text] There has been a noticeable aggravation of the world military-political situation and the development of international events is acquiring an increasingly dangerous nature as a result of the subversive activity by aggressive forces of imperialism, and American imperialism above all. The activity of militaristic circles especially increased following the arrival of the Reagan administration to power in the United States. The basis of that administration's foreign policy activity is the most shameless anticommunism and antisovietism.

After openly declaring many parts of the globe to be a sphere of "vital" interests, the United States and its allies are intensifying their intervention in internal affairs of socialist and developing countries, they are infringing on the national independence and sovereignty of states, and they are intensively preparing for war against the USSR and the socialist community as a whole. U.S. ruling circles are placing great emphasis here on the development of new strategies and concepts reflecting their views on the nature and methods of warfare under present-day conditions and intended to assure the implementation of their aggressive plans.

A new American military strategy was adopted in the very first year of this administration's rule. In contrast to all preceding strategies, it was given an even more offensive, openly aggressive character. U.S. Secretary of Defense Weinberger called it the strategy of "direct confrontation" with the USSR both on a global and a regional scale. In accordance with this strategy the Pentagon drew up a new concept for employing general purpose forces—the "airland battle." Its basic provisions are set forth in the new U.S. Army Manual F-100-5 [sic], with its essence as follows: using powerful weapons, deliver massive selective strikes against opposing enemy groupings and important enemy targets in short time periods and to their entire depth, inflict

damage on second echelons and reserves before they are committed, and thus achieve decisive success in operations of the initial war period.¹

The distinguishing features of NATO's military coalition strategy at the present stage consist of its further convergence with U.S. military doctrine and the clear-cut offensive character. The idea of a "deep strike" as contained in the "airland battle" concept was reflected for NATO in the notorious "Rogers Plan" (American General Rogers is the supreme commander of the bloc's joint armed forces in Europe). It proposes to prepare for the conduct of highly mobile operations with the simultaneous destruction of enemy troops by fire to the entire depth of operational alignment in order to prevent their reinforcement by the timely commitment of reserves and second echelons. The basic provisions of the aforementioned American concept actually were adopted by the North Atlantic Alliance and some of them already were being tested in European TVD's [theaters of military operations] during NATO's Autumn Forge-83 fall maneuvers.

The bloc's military leadership believes that the air force will play an important role in conducting airland operations. The forms and methods of its employment must continue to be determined by the "NATO air doctrine" adopted in 1976—a special document containing unified provisions on the combat employment of tactical aviation as well as of air defense forces and weapons in Europe. General Rogers believes, however, that an even closer interworking of aviation with ground troops and a certain redistribution of aviation forces according to missions accomplished will be required at the present stage with consideration of the "airland battle" concept.

According to the "NATO air doctrine," air operations are the primary form in which combat actions are conducted by tactical aviation, with a leading role given to the offensive operation.

In contrast to air combat actions with aviation participating in "airland battles" conducted by ground troops on an operational-tactical scale, an offensive air operation basically is an independent air force operation during which seemingly one and the same missions will be accomplished (winning and holding air supremacy, interdicting an area of combat actions, and so on), but on a larger operational-strategic scale within the framework of an entire theater of military operations.

Data are cited below about the NATO air forces and air defense based on materials published in the foreign press and the views of bloc military experts are revealed concerning the conduct of such an operation in the Central European Theater of Military Operations.

NATO AIR FORCES AND AIR DEFENSE IN THE CENTRAL EUROPEAN TVD. The leadership of this aggressive imperialist bloc gives this theater special attention, since the largest contingents of armed forces in Europe are deployed even in

1. For more detail on the "airland battle" see ZARUBEZHNOYE VOYENNOYE OBOZRENIYE, No 7, 1984, pp 29-35—Ed.

peacetime on the territories of the FRG, Belgium and the Netherlands, which are a part of the Central European TVD according to the NATO command allocation. These contingents include a powerful grouping of ground forces consisting of the Northern Army Group and Central Army Group (NORTHAG and CENTAG), as well as two allied tactical air forces (the 2d and 4th ATAF's). The latter have been placed in a theater command of NATO allied air forces (with its headquarters located at Ramstein Air Base in the FRG).

The 2d ATAF includes the British Air Force command in the FRG, tactical air commands of the Belgian and Netherlands air forces, the 3d Air Support Division and 4th Air Division of Air Defense of the FRG Luftwaffe, and one fighter squadron and a portion of the U.S. 3d Air Force. It has over 700 warplanes, approximately 500 surface-to-air missile [SAM] launchers and 36 Pershing-1A operational-tactical missile launchers.

The 4th ATAF includes the main forces of the U.S. 3d Air Force and 17th Air Force, the 1st Air Support Division and 2d Air Division of Air Defense of the FRG Luftwaffe, as well as the 1st Air Group of the Canadian Air Force (a total of 900 warplanes, 144 SAM launchers and 36 Pershing-1A missile launchers).

And so the NATO allied air forces in the Central European TVD have over half of the warplanes (more than 1,600) and other weapons of the total number at the bloc's disposal in Europe.

The command's air units and subunits have the heavy F-111 fighter-bombers, light Buccaneer bombers, F-4 multirole tactical fighters, F-104, Jaguar and Harrier fighter-bombers, the latest F-15, F-16, A-10 and Tornado combat aircraft, the light Alpha Jet attack aircraft (Fig. 1 [figure not reproduced]) and other equipment. In addition, the commander in chief of the allied air forces, who at the same time is commander in chief of air defense troops in the central zone of the NATO air defense system in Europe, has under his operational subordination SAM units (such as the 32d Air Defense Command of the American Army) and air defense units and subunits of NORTHAG and CENTAG. He has a total of over 1,350 SAM launchers under his subordination, including 450 Nike-Hercules long-range SAM launchers, more than 500 Improved Hawk medium-range SAM launchers, up to 400 Roland, Chaparral and Rapier short-range SAM launchers, approximately 700 Gepard and Vulcan self-propelled antiaircraft artillery mounts, and more than 800 portable SAM systems of various types.

As the foreign press notes, in an attempt to disrupt the existing strategic balance of forces in Europe with Warsaw Pact countries, the U.S. and NATO military leadership is conducting a number of measures for a further build-up in the attack might of their armed forces, including the air forces (and above all in the Central European TVD). To this end the improvement in the aircraft inventory is continuing, new missile units are being deployed, and so on.

The improvement in the aircraft inventory of the NATO allied air forces in this theater is being conducted by outfitting the units and subunits with new aviation equipment, the proportion of which already is rather high within the

overall number of aircraft. In particular, the tactical air commands of Belgium and the Netherlands received some 200 new F-16 fighters. The U.S. Air Force command in the European zone, which has its primary forces concentrated in the Central European TVD, has 108 A-10 attack aircraft, almost 100 F-15 fighters and 150 F-16's. Over 200 new Tornado attack aircraft have been delivered to military aviation of the FRG and Great Britain, the West German Luftwaffe additionally received 175 light Alpha Jet attack aircraft, and so on. The rearmament continues and, as the western press indicates, it will be completely finished by the late 1980's.

By this same time it is planned to complete the deployment in Western Europe of 572 new American medium-range missiles, begun in late 1983, including 108 Pershing-2 ballistic missiles (Fig. 2 [figure not reproduced]) and 464 land-based cruise missiles. It is planned to deploy the bulk of them in the Central European TVD, and specifically all 108 Pershing-2 missiles on FRG territory, 160 cruise missiles in Great Britain,² 96 in the FRG and 48 each in Belgium and the Netherlands. The former will be a part of the American ground forces and the latter a part of the U.S. Air Force command in the European zone. According to foreign press reports, three batteries of Pershing-2 missiles (27 launchers in the FRG), two cruise missile flights (32 launchers in Great Britain) and one cruise missile flight (16 launchers in Sicily) have been placed in a state of combat readiness as of the present time.

In conformity with plans of the U.S. and NATO military leadership, the bloc air forces in Europe are to be reinforced in a threatened period. This is planned to be done above all by moving tactical air units and subunits from the United States. Concerning this question, former U.S. Secretary of Defense Brown declared that the American Air Force is capable of rebasing 60 squadrons to Europe within 10 days. According to the latest foreign press reports, it is planned to bring the number of such squadrons to 80 by 1986 and to increase the overall number of aircraft in them from 1,200 to 1,900.

In addition, it is planned to assign up to 80 B-52 heavy strategic bombers (Fig. 3 [figure not reproduced]) for accomplishing missions in the interests of the NATO joint armed forces in Europe. Judging from exercise experience, air units and subunits of the British Air Force command in Great Britain, deck-based aircraft of the U.S. Navy as well as aircraft of the French and Canadian air forces can be used to reinforce the bloc's forward air groupings. A large number of the aforementioned forces can either be transferred to the operational subordination of the NATO allied air forces command in the Central European TVD or can operate in its interests.

And so according to estimates of western military experts, if necessary the already powerful bloc air grouping in Central Europe can be almost doubled in rather compressed time periods. All this indicates once again that the U.S. and NATO military leadership is giving special attention to this theater in the course of preparing war against the USSR and other countries of the socialist community.

2. The British Isles are not included in the Central European TVD under the breakdown of the NATO command, but it is planned to use their territory for accommodating strategic reserves of ground troops and air forces intended chiefly for operations in the Central European TVD--Ed.

According to views of NATO military specialists, the OFFENSIVE AIR OPERATION is regarded as the primary form of conducting warfare in which all air forces in a theater are under centralized leadership and interwork at various levels to achieve specific objectives. Conduct of the operation requires the concentration of major combat air forces with their massive employment, as well as the inclusion of ground forces' weapons, particularly operational-tactical missiles. The operation can be conducted at the beginning of and during military actions both independently and within the framework of a strategic operation.

The primary objectives of the first offensive air operation in the Central European TVD is to inflict damage on the grouping of enemy armed forces, disrupt the integrity of his air defense system and disorganize the command and control system. To achieve these objectives NATO's allied air forces in the TVD must accomplish the primary mission of winning air supremacy, since the success of combat actions by air and ground forces, and of naval forces in maritime sectors, depends on this. The second important mission is to inflict telling damage on enemy ground forces during close air support and the interdiction of combat areas. Throughout the operation it is planned to carry out aerial reconnaissance not only in the interests of commanders of the allied air forces and ATAF's, but also in the interests of higher echelons.

The commander in chief of OVS [joint armed forces] in the theater directs the offensive air operation through the commander in chief of the allied air forces. The responsibility for planning, preparing and conducting an operation rests with the CIC's of the 2d and 4th ATAF's. Its depth can reach 1,000 km, the width of the air groupings' zone of actions may reach 700-800 km, and it may last 3 days.

As the foreign press notes, the number of warplanes in 2d ATAF may be 1,300 with consideration of possible reinforcement, and it may be up to 1,500 in the 4th ATAF. But the level of combat readiness of the aircraft inventory and of crews as well as the need to keep nuclear weapons platforms in readiness for a combat sortie place restrictions on the number of aircraft which can take part in an operation. In the opinion of NATO military experts, up to 1,000 aircraft within the 2d ATAF zone and up to 1,200 in the 4th ATAF zone can be included in the operation in the Central European TVD.

According to views of bloc military specialists, the concept of an offensive air operation may provide for the delivery of two or three massed strikes per day on several axes.

Up to 2,200 aircraft may take part in the first strike. In the opinion of NATO military experts, its primary objective will be to inflict damage on the opposing enemy grouping, primarily on the air forces and air defense, and to provide conditions for friendly armed forces to wage active combat operations.

Judging from foreign press reports, its concept may consist of a penetration of the air defense system along several axes, destruction of enemy aircraft on the ground and in the air, and destruction of command posts and other control

entities of the enemy air forces and air defense. Primary air efforts (up to 75 percent of the aircraft taking part in the strike) will be directed toward winning air supremacy while the remaining aircraft will accomplish close air support of ground troops, interdict the combat area and perform aerial reconnaissance.

The objective of the second mass strike is to win total air supremacy and, in achieving it, to inflict greatest damage on enemy ground troops on the battlefield and on his second echelons and reserves for the purpose of preventing their commitment to the engagement. It is planned to disrupt measures for restoring the damage inflicted on the enemy as a result of the first strike, to deprive him of the opportunity of basing his aircraft at airfields 500 km from the front line, to bring more active pressure against his aircraft on the ground and in the air, and to provide favorable conditions for friendly ground troops to conduct combat actions. It is proposed to assign up to half of the aircraft participating in the strike to accomplish the mission of winning air supremacy, 25 percent for interdicting the combat areas, 10 percent for close air support and up to 5 percent for conducting aerial reconnaissance. It is not precluded that the distribution of aircraft by missions may change somewhat in connection with NATO's adoption of basic provisions of the "airland battle" concept.

As shown by the experience of conducting Cold Fire exercises of NATO allied air forces in the Central European TVD, the operational alignment of aviation in delivering massed strikes along individual axes envisages two primary echelons: an echelon for penetrating the air defense system, and an attack echelon.

The ECHELON FOR PENETRATION OF THE AIR DEFENSE SYSTEM may consist of attack aircraft, escort fighters, and electronic warfare (EW) aircraft (up to 100 aircraft). It is assigned the missions of destroying enemy air defense forces and assets and supporting the overflight by aircraft of the attack echelon to strike objectives.

According to views of NATO military specialists, groups of up to 60 attack aircraft are intended for fire suppression and destruction of enemy radars of various types, and above all the radars for guiding SAM's and fighter aircraft. To accomplish this mission they will include aircraft armed with anti-radiation missiles, primarily the F-4G Wild Weasel specially intended for this purpose.

Groups of up to 30 escort fighters must cover the attack aircraft against enemy fighters. They will consist chiefly of air defense fighters as well as tactical fighters armed with air-to-air missiles.

During this time the EW aircraft (up to 10 of them) will jam the electronics of the enemy air defense system to reduce its effectiveness and thus support combat actions of the attack groups.

Judging from western press reports, the ATTACK ECHELON may include up to 700 aircraft and may consist of groups of attack aircraft, escort fighters, tactical reconnaissance aircraft and EW aircraft. It is assigned the missions of destroying enemy air defense forces and assets, destroying his aircraft on the ground and in the air, and disabling airfields, command posts and other control entities. Some of the aircraft will operate in the interests of ground troops by accomplishing missions of interdicting combat areas and providing close air support.

This echelon may include up to 500 attack aircraft, including tactical fighters (F-4, F-16, F-104G, Tornado-GR.1, Harrier-GR.3, and so on) and light bombers (Buccaneers) capable of effectively hitting detected air defense weapons, airfields, command posts and other facilities; the A-10 and Alpha Jet attack aircraft as well as the Jaguar-GR.1 and F-111 fighter-bombers, which will deliver strikes in the interests of ground troops while interdicting a combat area and providing close air support.

In addition to covering the attack aircraft, escort fighters (up to 120) can in some cases accomplish missions of sealing off enemy airfields.

Tactical reconnaissance aircraft (up to 50 RF-4E, Jaguar-GR.1 and other aircraft) are assigned final reconnaissance of targets on enemy territory before a strike is delivered, determination of strike results, and performance of aerial reconnaissance in the interests of the command element of the bloc air forces and joint armed forces as a whole.

According to views of NATO military experts, attainment of objectives in an offensive air operation depends substantially on accomplishment of the mission of winning air supremacy. Its primary phases are considered to be a penetration of the air defense system, delivery of strikes against SAM positions and airfields, and the conduct of aerial combat.

Based on the experience of exercises by NATO allied air forces, the penetration of an air defense system in the Central European TVD may be accomplished in sectors 100-120 km wide. The launch of drones prior to this is possible for the purpose of leading the enemy astray, uncovering the location of weapons, determining the characteristics of his air defense system's electronics, and jamming them. Then it is planned to begin active combat actions by aircraft of the penetration echelon, primarily those such as the F-4G, F-104G and others armed with the Shrike, Standard-ARM and AS-37 Martel antiradiation missiles, which can carry out both electronic and fire suppression of the enemy air defense system's radars.

Aircraft of the attack echelon are assigned primary missions of destroying SAM systems and airfields. NATO military specialists believe that these missions can be accomplished successfully by the F-4, F-111, F-16, Buccaneer, Harrier and Jaguar aircraft armed with antiradiation missiles, conventional aerial bombs, cannon and cluster weapons. In delivering strikes against airfields it is planned to destroy aircraft and to put runways, ammunition and fuel dumps, and other airfield facilities out of action. According to estimates by NATO

military specialists, all this will lead to a weakening of the enemy air grouping, an increase in the density with which his aircraft are based, and a hindrance to the maneuver of forces and assets.

The following procedure for delivering a strike against an enemy airfield was observed in one of the exercises by the NATO allied air forces in the Central European TVD. The group included 16 aircraft. Organizationally it included a flight of F-104G fighter-bombers, two flights of F-4 aircraft and one flight of Jaguars. The flight of F-104G aircraft armed with cluster bombs was first to make an approach to the target. It delivered a strike against aircraft located on open hardstands. Then one flight of F-4's bombed runways and taxiways while the other fixed results of actions by the first two flights. In the final phase four Jaguar fighter-bombers mined the airfield using bombs with a varying time delay of explosion (30 minutes, 1 hour, 5 hours).

NATO military experts also attach importance to aerial combat in the struggle to win air supremacy. They plan to use both air defense fighters as well as attack aircraft armed with air-to-air missiles for this purpose. They believe that during an offensive air operation there will be 5,000-7,000 flights a day in some zones of the air space in the Central European TVD up to 160 km wide. Under these conditions difficulties will arise in employing long-range and medium-range air-to-air missiles with a radar guidance system, and so it is more expedient to employ fighters in such areas, armed with cannon and short-range guided missiles with infrared homing heads, i.e., close-range weapons. According to views of foreign specialists, aircraft with long-range missiles such as the F-15 with the Sparrow guided missile can operate effectively over enemy territory and so it is planned to include them in the escort fighter groups.

As noted above, during the offensive air operation NATO's allied air forces in a theater will accomplish missions of interdicting combat areas and providing close air support to friendly troops.

In the first instance the primary objectives of strikes by tactical fighters and bombers are considered to be the second echelons of enemy combat formations, his reserves in assembly areas and on the march, highway junctions, railroad stations, bridges, crossings, depots and supply bases. According to exercise experience, accomplishment of these missions is assigned to attack groups consisting of the F-111, F-4, Buccaneer, F-104G and other aircraft. In addition to conventional aerial bombs, they can employ guided missiles with various guidance systems. Other tactical aircraft also may be used for delivering strikes against enemy second echelons.

It is planned to accomplish close air support of ground troops chiefly by efforts of units and subunits equipped with the A-10 and Alpha Jet attack aircraft as well as the Jaguar and Harrier fighter-bombers. Strikes by tactical aircraft in the interests of close air support were delivered to a depth of up to 50 km both under routine and urgent requests in the Cold Fire exercises held annually in the Central European TVD involving the participation of aircraft from the 2d and 4th ATAF's.

A portion of the tactical aircraft will be on air alert status to reduce the reaction time to urgent requests received from the ground troops. To reduce the detail of forces assigned for close air support and simultaneously to increase the number of aircraft sorties, the NATO command is placing special emphasis on reducing the aircraft turnaround time for another sortie. The foreign press notes that primary directions for resolving this problem are an improvement in methods of fueling the aircraft, establishment of the necessary store of combat equipment and drop tanks, and the integration of work for simultaneous maintenance, fueling and weapon suspension.

In the opinion of NATO military experts, a high organization of control over air combat actions is necessary for aviation's effective accomplishment of all missions assigned to it during an offensive air operation. Based on this, there is a ramified network of fixed and mobile command posts, operations centers and other control bodies present even in peacetime in the bloc armed forces, including in the Central European TVD. A sample diagram and procedure for control of air actions are shown in Fig. 4.

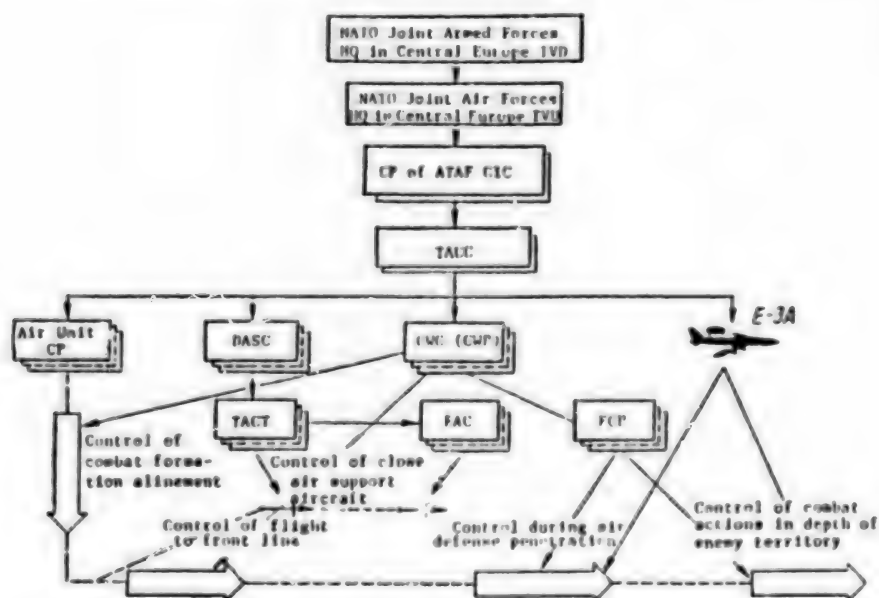


Fig. 4. Tactical air control entities in the Central European TVD and procedure for controlling tactical air actions

The combat mission is assigned to air units directly from tactical air control centers [TACC's] in conformity with the decision and directions of the ATAF CIC. In addition, the mission is assigned from the TACC's to the control and warning centers and posts (CWC and CWP) for controlling the operational formation and flight of aircraft to the front line. Control of its combat formations during penetration of the enemy air defense and in delivering a mass strike is accomplished from the CWC, the CWP and forward command posts [FCP's]. Problems of controlling air combat actions in the primary phases of an offensive air operation from the E-3A AWACS airborne warning and control aircraft

are practiced during exercises of NATO's allied air forces in the Central European TVD.

In close air support the TACC makes its decisions known to air unit commanders and informs the air support operations centers [ASOC's] about this; the latter are deployed with army corps (previously they were called direct air support centers [DASC's]). Control over air actions at the front line is exercised by tactical air control teams [TACT's] formed with divisions and brigades, and immediate vectoring of aircraft to targets is accomplished by ground and air forward air controllers [FAC's].

In the opinion of NATO military specialists, the existing system of tactical air control on the whole permits successful direction of combat actions during an operation. As shown by experience, however, this system also has certain deficiencies. For this reason the bloc's military leadership is placing great emphasis on its improvement.

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FOREIGN MILITARY AFFAIRS

AMERICAN SHIPBOARD RADARS

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[Text] Great emphasis is placed on outfitting ships with the latest electronic equipment, and above all with radars which support the employment of onboard weapons, in the course of implementing the U.S. Navy shipbuilding program aimed at achieving superiority over the Soviet Navy.

All radars aboard modern ships are connected with navy tactical data systems [NTDS's], and together with them they accomplish the following missions: support navigation safety; provide a continuous display of the air and surface situation; search for and detect airborne and waterborne targets; provide automatic tracking of targets; determine their position and motion elements; identify the most dangerous targets; process data for decisionmaking for weapon employment; select weapons for delivering an attack against a detected enemy and for target distribution to different weapon systems; calculate predicted points of impact with targets, lay surface-to-air missiles [SAM's] and tube artillery, and assess results of weapon employment.

Western specialists conditionally divide shipboard radars into four groups: multifunctional radars which simultaneously detect and track targets and guide weapons to them; airborne target detection radars (three-dimensional), which determine the target's range, bearing and angle of site; radars for detection of airborne or waterborne targets (two-coordinate) and which determine the target's range and bearing; and radars for fire control, target designation, or for determining positions for firing against airborne or waterborne targets.

The AN/SPY-1 multifunctional radar made by RCA is the most up-to-date radar in the FIRST GROUP. It is a part of the multifunctional shipboard Aegis weapon system installed aboard "Ticonderoga" Class guided missile cruisers. It provides for the search, acquisition and automatic tracking of more than 100 targets and it simultaneously guides several guided missiles to selected targets.

The detection range of targets flying at high altitude reaches 500 km, and at low altitudes the range is restricted by the radar horizon.

The AN/SPY-1 radar antenna (Fig. 1 [figure not reproduced]) consists of four identical phase antenna arrays containing some 4,500 phase shifters. They are accommodated on the forward, side and rear parts of the ship's superstructure. The sector of view of each FAR [phased array antenna] is 90° in azimuth and elevation, which permits observing the entire upper hemisphere. The antenna forms a narrow beam through control of the phase of signals arriving at the array elements. The oscillation phase is controlled with the help of the phase shifters located in the array elements.

The beam stabilization system provides for normal antenna operation with rolling and pitching motion (30° and 10° respectively).

The Raytheon transmitter of the AN/SPY-1 radar is constructed according to a three-stage configuration.

The first stage is made with two low-power traveling wave tubes [TWT's]. One of them is a reserve and operates on a dummy antenna. When the primary TWT is disabled the reserve TWT is automatically switched into the transmitter's operating circuit. This principle of constructing the circuit substantially increases the transmitter's reliability.

The second stage also is made with TWT's, but it has considerably greater power. It serves to "drive" the powerful output tubes of the third stage of the transmitter.

The third stage is a power amplifier made with amplifier tubes with crossed fields (a band of 3.1-3.5 GHz, peak power of 125 kw).

Electronic control of the beam's position in space is accomplished in the vertical and azimuthal planes in the AN/SPY-1 radar. The AN/SPS-32 and AN/SPS-33 radars, installed aboard the nuclear-powered carrier "Enterprise" and the nuclear-powered cruiser "Long Beach," also are among radars of this type. At the present time they are being replaced by more up-to-date radars.

IN THE SECOND GROUP of radars (three-coordinate), radars with electronic beam steering only in the vertical plane with mechanical rotation of the lobe in the horizontal plane have become the most widespread. They include the AN/SPS-48 and AN/SPS-52 radars. Radars of these two types number some 100 and they are installed aboard ships of various types in the navies both of the United States and of other capitalist states.

The AN/SPS-48 and AN/SPS-52 radars are a further development of the AN/SPS-39 radar. They utilize an intermittent change of frequency with several nonsynchronized crystal oscillators. Program control of the beam's position in the vertical plane is done with the help of a special EVM [electronic computer]. The antenna is a flat, multielement planar array with a small plate on the left side for side-lobe suppression (Fig. 2 [figure not reproduced]). The

AN/SPS-48 is a multiple-beam radar and has a higher radiated power than the AN/SPS-52. It is installed aboard destroyers armed with the Harrier and Tartar SAM systems and is intended for issuing target designation.

The foreign press notes that a feature of the AN/SPS-52 is that values of its main characteristics (carrier frequency, peak power, repetition frequency, and pulse width) change in the course of its operation depending on the elevation of the radiation pattern, resulting in a significant improvement in the radar's antijam capability. Its antenna is the very same type as for the AN/SPS-48, but with two side panels, and it is tilted at an angle of 18° to the vertical. In the opinion of foreign specialists, it will be retained aboard ships until 1990 (see color insert [color insert not reproduced]).

THE THIRD GROUP OF RADARS (two-dimensional) includes the AN/SPS-37, AN/SPS-43 and others. Having been developed in the early 1960's, some of them such as the AN/SPS-43 have undergone modernization and they continue to be installed aboard ships under construction. To determine the third coordinate the air surveillance radars are supplemented by AN/SPS-30 heightfinding radars.

The AN/SPS-10 became the most widespread among two-dimensional surface search radars. At the present time it is being replaced intensively by a new radar, the AN/SPS-55 (which operates in the frequency bands of 8-10 and 10-20 GHz with a peak power of 130 kw, Fig. 3 [figure not reproduced]). Solid-state elements were used in its design.

Leading U.S. electronics firms are placing great emphasis on developing ship-board surface search radars, which can be divided conditionally into two classes. The first class includes radars with an effective radius of up to 100 km. In addition to detecting surface targets, they must support navigation safety both on the high seas and in restricted areas. The second class includes relatively simple radars with an effective range of no more than 50-60 km.

The new radars make extensive use of special methods which help eliminate interference from ocean waves and atmospheric precipitation, particularly pulse integration, a change in operating frequency, circular polarization and so on.

Fire control radars belonging to the FOURTH GROUP include the AN/SPG-51C and AN/SPG-55B, intended for guiding missiles in the Tartar and Harrier SAM systems respectively. These radars were developed in the 1960's but have been modernized several times since then (average power was increased, guidance accuracy and antijam capability were improved). They operate in two modes--pulse and continuous wave [CW]--for illuminating a target while the SAM is being guided.

The western press notes that future missile fire control radars are to use phased array antennas and multipurpose EVM's capable of performing the calculations necessary for guiding missiles with high speed and accuracy.

In recent years RCA has developed a new shipboard fire control radar, the HR-76, which is planned for use in a multifunctional weapons system. It operates automatically in two modes: 360° search and guidance of guided missiles against airborne, waterborne and ground targets, and in certain situations it can be converted to manual control. Its basic characteristics: carrier frequency of around 10 GHz, peak power of 250 kw, pulse width of 0.25, 0.5 and 1.0 microns, pulse repetition frequency of 2,500-3,000, 1,200-1,800 and 1,000 Hz, acquisition range with radar cross-section equal to 1 m² is 40 km. It has a moving target selection [SDTs] device.

The fire of tube artillery is controlled using the AN/SPG-48 and AN/SPG-53 radars, which have been installed aboard many ships for a long while now. The AN/SPQ-9 and AN/SPG-60 radars developed relatively recently also are included in this type of radars. Both of them operate in the frequency band of around 10 GHz and have high accuracy in measuring distance.

The FLEXAR radar is a new fire control radar for firing against waterborne targets, aircraft, and antiship missiles. It can be employed jointly with shipboard radars such as the AN/SPS-40 (a frequency band of 2-3 or 3-4 GHz) and the AN/SPS-49, receiving target designations from them. The radar operates in the frequency band of 8-10 or 10-20 GHz. It uses for the first time a combination system for antenna beam steering: in the elevation plane control is by the phase method and in the horizontal plane by the same method, but with simultaneous mechanical rotation of the radiation pattern in azimuth (at a rate of 60 rpm).

The use of a needle-shaped beam and its scanning by an irregular law as a result of dual control (electronic beam scanning with simultaneous mechanical rotation in the horizontal plane) increases the radar's protection against active jamming. Use of correlation processing methods in the radar permits reducing the number of false alarms.

The viewing angle of space in the vertical plane is 0-90° and it can reach 45-90° in the horizontal plane by electronic scanning both in the direction of rotation and in the reverse direction.

Reliable target detection against a background of clutter from ocean waves is achieved by use of the pulse-doppler operating mode with a high pulse repetition frequency.

The nature of a target is determined (in a few milliseconds) with the help of a special processor based on preliminary information about target speed. The data obtained go into the central EVM, which is used to select the pulse repetition frequency and optimum shape of the probing signal which is emitted following the next beam rotation. Signals of various form provide for detection and accurate, unambiguous measurement of the target's range and radial velocity in one rotation of the antenna. Data for target tracking are formed during the next rotation. Information about identified targets is updated once every few seconds, and several times a second for unidentified targets.

The foreign press notes that the FLEXAR radar uses a number of standardized elements from other radars, particularly the improved transceiver from the airborne radar of the AN/AWG-9 weapon control system installed aboard the F-14 Tomcat fighter. In addition, it is planned to use in the FLEXAR modulators, control and display panels, processors, power units and other devices in production which are intended for making up the set of radars being produced serially or planned for production in the near future. The radar's planned weight (less power sources) is no more than two tons. Its delivery to ships was to have begun in 1983.

The increased speed of modern aircraft and considerable reduction in their flying altitudes require rapid issuance of target designation from radars so that weapons can promptly destroy a target, while the presence of many targets in the air during combat may lead to the appearance of a large flow of radar data which only electronic means are capable of receiving and processing. For these reasons the R&D in this area is being carried out along the following lines: an improvement in the effectiveness of discriminating small, fast, low-flying targets against a background of clutter from ocean waves, as well as an increase in combat readiness, anti-jam capability and reliability of radars and radar systems as a whole; integration of these systems and a reduction in their reaction time; automation of the processes of target acquisition, tracking and processing of data on them. In addition, the naval command is placing great emphasis in radar development on problems of their standardization, a reduction in weight-size characteristics, and development of the millimeter wave band. High combat readiness is achieved by using EVM's (with a speed of up to 10^6 - 10^7 operations per second) and special equipment providing high stability toward electronic countermeasures.

The firm of Westinghouse, for example, developed the AN/SPS-58 radar (with an effective range up to 20 km and a frequency band of 1-2 GHz), intended for detecting fast, low-flying targets and issuing target designations for the NATO Sea Sparrow SAM system. It uses for the first time an SDTs device and digital moving target indicator and suppresses clutter from the sea surface. Radars previously developed had analog SDTs which did not provide full suppression of interference, especially with a heavy sea.

Radars are being developed with high resolution in range and angular coordinates to achieve high spatial selection. In recent years the resolution has been increased through pulse compression (a compression ratio of 60-100 and in the future it is planned to increase this). High resolution in angular coordinates is achieved by narrowing the radiation pattern beam.

Radar anti-jam capability is improved by several methods, one of which lies in changing the parameters of the radiated signal. In principle all parameters can change (carrier frequency, pulse repetition frequency and pulse width), but a change in carrier frequency, used in almost all shipboard radars, has become the most widespread. The carrier frequency of radars of the same type aboard adjacent ships may be separated by several megahertz for protection against jamming and above all for assuring operation without mutual interference. The anti-jam capability also is improved by changing the carrier

frequency from pulse to pulse according to a linear, pseudorandom or some other law. This method is widely used at the present time and its further development is expected.

A trend has been seen in recent years toward countering active jamming affecting the side lobes of the radiation pattern by using special compensating antennas such as, for example, in the AN/SPY-1 radar. Western specialists believe that this is a rather promising direction. To protect radars from jamming at the present time and in the future it is planned to make extensive use of several receive channels (linear and logarithmic) as well as different kinds of amplification adjustments. In addition, the introduction of a monopulse method of determining target coordinates contributes to an improvement in antijam capability.

As noted earlier, there is a need for a significant reduction in radar reaction time in connection with the appearance of small, low-flying targets because they are detected only at short ranges where 8-10 seconds remain for decisionmaking and repulsing the attack. In the opinion of foreign specialists, reaction time will be reduced by increasing the antenna rotation rate to 30-60 rpm, by using phased antenna arrays in the radars with electronic beam steering in space (in one or two planes), by introducing automatic target acquisition modes, and by issuing a target designation and performing the tracking right up until destruction of the target.

The method of integrating shipboard systems has seen further development. This permits conducting effective fire control of the ship's weapons around the clock under all weather conditions and in the presence of smoke and fire. Along with the radars, infrared devices, laser units and optical means are included in such systems.

Recently the United States has been placing considerable emphasis on developing radars in the millimeter wave band, since they have many advantages over existing radars, particularly greater bandwidth, high spatial and frequency resolution, and small antennas. The foreign press indicates that millimeter waves propagate well in certain "windows" and are capable of penetrating clouds, smoke, dust and fog.

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FOREIGN MILITARY AFFAIRS

BRITISH MINESWEEPER 'BRECON'

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 11, Nov 84 (signed to press 10 Nov 84) pp 72-74

[Article by Lt Col V. Vladimirov and Capt 2d Rank B. Tyurin]

[Text] Having set a course toward building up the might of the Navy, one of the basic instruments of aggressive policy of the country's ruling circles, the British naval command has been activating construction of submarines, large surface combatants as well as minesweepers. According to the foreign press, in 1975 the Navy command began developing new mine countermeasures ships and the M 29 "Brecon"--the lead ship in a series of 11 (see color insert [color insert not reproduced])--was commissioned as early as March 1980. It is also reported that the Navy had eight such ships as of the middle of this year.

The "Brecon" presently is the largest of ships of glass-reinforced plastic among those in foreign navies. Specialists place it in a class of new generation mine warfare ships (intermediate between ocean and coastal minesweepers), which combine the qualities of conventional minesweepers and minesweepers/minehunters.

Their basic tactical and technical characteristics: standard displacement of 615 tons, full load displacement of 725 tons; a length of 60 m, width of 10 m and draft of 2.5 m; main power plant (GEU) output of 3,600 hp; full speed of 16 knots, and with sweep up to 8 knots; a range of 1,500 nm at 12 knots; and a crew of 45, six of whom are officers.

"Brecon" Class minesweepers/minehunters are equipped with the 193M minehunting sonar, two PAP-104 self-propelled remote-controlled submersible vehicles, sweeps (the acoustic Osborn, electromagnetic MI Mk 11, and the contact Oropesa Mk 3 Mod 2), a radio navigational system with Mk 21 receiver displays, the 1006 navigation radar, the CAAS information-control system, and watch buoys. The ships have mine specialist swimmers with appropriate diving gear.

According to foreign press data, these minesweepers are intended for hunting, determining the location of, classifying and destroying moored and seabed mines in the North Sea, in coastal waters of Great Britain and in the English Channel and Strait of Dover.

The "Brecon" has a long forecastle (up to 70 percent of her length) and a sweeping area in the stern enclosed by a bulwark. The deck accommodates a superstructure which has a pilot house in the bow portion (on the second tier), a smokestack in the stern portion, and a small mast with antennas and lightning rods between them.

A 40-mm automatic gun mount is installed on the forecastle erection in front of the pilot house. There is a room for storing two PAP-104 self-propelled remote-controlled submersible vehicles in the after portion of the forecastle. Two anchor davits with a load capacity of 3 tons and 1 ton are accommodated there on each side with the basic sweeping equipment as well as an acoustic generator. Buoys of a short-range navigation system, two boats, and a platform for supplying equipment to a helicopter winch are accommodated on an area above the sweeping equipment.

The ship's hull is divided into a number of compartments by watertight bulkheads.

The hull, deck and bulkheads are made of glass-reinforced plastic. Bunched glass fabric (glass matting) is used as the glass filler and cold-hardened isophthalic polyester resin serves as the binder element.

The main hull consists of single plating and a transverse framing system with a spacing of 600-800 mm. Framing beams are box-shaped (a foam plastic filler is inside them) and, being glued to the plating, they are additionally fastened by bolts and nuts.

Main longitudinal bearing members also are used in the ship's hull, including a massive vertical keel and four bottom stringers. The outside bottom plating is 35-45 mm thick and the deck plating is some 25 mm thick. The main transverse bulkheads are single-layered with framing. Tanks for water and fuels and lubricants built into the hull as well as the bulk of foundations beneath shipboard machinery are filled with glass-reinforced plastic, and metal elements are built into foundation structures for attachments.

Aluminum-magnesium alloys, low-magnetic steel and titanium with low values of magnetic characteristics, which does not affect the magnetic and weight characteristics of the ship's hull, are used in making small foundations and attachments of complex configuration. The hull's main framing is attached to the plating using titanium fastenings to make it explosion-proof.

In making the power plant, specialists placed special emphasis on providing for rates of speed necessary for hunting and sweeping mines, as well as on reducing acoustic and magnetic fields. It is believed that the minesweeper must run at low speed for a long while in hunting mines, remain at one and the same location and maneuver at low speeds. While sweeping mines there must be a simultaneous placement and towing of sweeps of various types and purposes at appropriate rates of speed (Fig. 1).



Fig. 1. Diagram of sweeping with contact, electromagnetic, and acoustic sweeps:

1. Contact sweep buoy
2. Otter
3. Contact sweep
4. Depressor roller bracket
5. Kite wire
6. Depressor
7. Electromagnetic sweep loop
8. Acoustic sweep otter
9. Acoustic sweep cable
10. Acoustic monitor cable
11. Acoustic monitor
12. Generator lifting line
13. Towed acoustic generator
14. Float line
15. Acoustic sweep float
16. Float lifting line

(reserve) pump with electric drive is accommodated in a separate compartment together with a booster pump. It activates the sweep winches if the auxiliary engine is operating on the pulse generator (480 kw output) supplying the electromagnetic sweep.

The reducers are fitted with hydraulic motors, which independently rotate two shaftings from the auxiliary engine via pneumatic couplings. In addition to the main hydraulic system there is an auxiliary system which activates small deck winches, anchor davits and capstan. It operates from two electric pumps which function continuously and from two pneumohydraulic piston-driven accumulators connected with a high-pressure air system.

The steering arrangement operates from a low-magnetic electrohydraulic system. Special low-magnetic pumps (both oil and circulating pumps) are used in the following systems: engine cooling, air conditioning, domestic (water), and sewage-disposal systems. A thruster accommodated in the ship's bow operates off a pump and is controlled from the bridge by a hydraulic drive.

The requisite rates of speed are achieved aboard the minesweeper/minelayer "Brecon" thanks to the presence of a main and an auxiliary power plant which operate together with a thruster. The GEU consists of two 9-59K V-18 reversible diesels of low-magnetic design (1,800 hp each) driving two fixed-pitch propellers (VFSH) through clutches, reducers and shafting. It is a two-stroke diesel with 1,700 rpm weighing 3.39 tons with a specific weight of 4.79 kg/kw, with dimensions of 1.6x1.7x1.95 m, and with a built-in reducer with a gear ratio of 8.53:1. The nonmagnetic materials make up 90 percent of the diesels' construction.

The propellers are made so as to create minimal noise with a maximum possible diameter. According to foreign press reports, the most favorable acoustic field characteristics of the minesweeper "Brecon" come with a relatively low propeller rpm.

The auxiliary power plant is used for hunting mines and maneuvering. In this case, as when sweeping at low speed, the ship's motion comes from a 9-55B 9-cylinder auxiliary engine of 750 hp in a low-magnetic design (an rpm of up to 1,200). Four variable-delivery hydraulic pumps operate off it; they are a part of the main hydraulic power transfer system. A fifth

The power plant is automated. Operation of machinery is monitored with the help of an electronic system equipped with emergency warning signaling. The ship's superstructure has a 60 kw emergency gas-turbine generator contained in a spraytight, soundproof housing.

The engine compartment and electrical compartment accommodate two fixed fire-fighting systems: a main chemical extinguishing system and an auxiliary sprinkler system serving to spray sea water. Spaces with increased fire danger where there is especially valuable equipment and gear have gas analyzers as well as standard fire extinguishing equipment provided for ships of this type.

The minesweeper's main power supply system consists of three diesel generators with a total output of 600 kw. Three-phase alternating current (440 volts, 60 Hz) is produced by a generator activated by a 266 kw 12-cylinder diesel (364 hp at 1,800 rpm).

The power supply system includes transformers which supply electrical power to equipment controlling shipboard machinery, warning and emergency signaling, EVM [electronic computer], compass, intercom equipment, steering engine, radars, minehunting sonar, and radio equipment. Main distribution panels are installed at the conning station.

The magnetic and acoustic fields set up by the minesweeper/minehunter's power plant were reduced in developing the plant. In particular, the magnetic field was reduced by making diesel parts out of low-magnetic or nonmagnetic materials (their weight is around 50 percent of the total weight). The modular pump unit was made fully of nonmagnetic materials.

In developing the ship's electrical equipment, considerable emphasis was placed on reducing its magnetic field to a minimum and assuring electromagnetic compatibility of electronic equipment. To this end electric motors with magnetic compensation, low-magnetic starters and other new equipment were installed aboard the "Brecon." Despite the fact that a large portion of the equipment was developed in conformity with requirements for reducing the magnetic fields they created and eliminating ferromagnetic materials, a magnetometer was installed on the mast to monitor magnetic characteristics.

The glass-reinforced plastic hull increases the likelihood of appearance of mutual electromagnetic interference from elements of the equipment, and so a special shipwide grounding system was developed. In addition, there is a three-meter lightning rod attached to the mast.

To eliminate electrostatic charges which might form in fuel tanks accommodated in a hull made of glass-reinforced plastic, the metal parts both of the tanks and of piping which come in contact with fuel are connected by jumpers to a grounding bus.

In addition, steps were taken to reduce active vibration aboard the minesweeper/minehunter to protect the ship against acoustic mines, to reduce the level of the ship's own interference with the operation of the minehunting sonar, and to increase the shock resistance of machinery and systems. Active

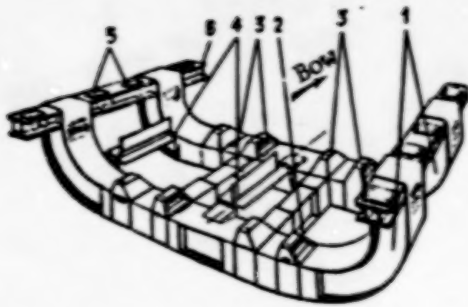


Fig. 2. U-shaped base of glass-reinforced plastic:

1. Main beams
2. Connecting beam
3. Engine supports
4. Equipment support attachments
5. Base plates
6. Upper beam

vibration was reduced by using soundproofing shock absorption of machinery and means of vibration absorption and vibration-proof insulation.

As the foreign press notes, a fundamentally new method for reducing the vibration level was used in the ship. It consists of the fact that the main engines are mounted on special shock-absorbing foundations of glass-reinforced plastic--U-shaped bases with good vibration-damping characteristics (Fig. 2). They are attached to the ship's hull above the design waterline and absorb the vibration of operating diesels. It is assumed that all these measures permitted a maximum reduction in the parameters of her acoustic field.

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FOREIGN MILITARY AFFAIRS

WEST SAID TO PLAN BLOC IN SOUTH ATLANTIC

Moscow KRSNAYA ZVEZDA in Russian 27 Dec 84 p 2

[Article by Capt 2nd Rank Ye. Nikitin: "A Base in the South Atlantic"]

[Text] Sometimes short reports appear in the press that after the seizure of the Falkland (Malvinas) Islands, England continues to occupy and militarize them. Could you tell us about this in more detail?

Lt P. Zakharov

Dear Comrade Zakharov: Exactly 2 1/2 years have passed since the end of the Angol-Argentine conflict in the South Atlantic. I wrote this phrase and fell to thinking: would it be correct to speak of the end of the conflict? It is true, on the one hand, that the Argentine garrison in Port Stanley ceased resistance in the middle of June 1982. The military conflict came to an end. But, on the other hand, the British continue to occupy islands 12,870 kilometers from their mother country.

In reality, the English proceeded to militarize the Falklands (Malvinas) immediately after their settlement. Now there are about 7,000 English servicemen there. That is three and a half times the number of the local population. A new airfield is being built at Mount Pleasant in addition to the one in Port Stanley. It will have two runways designed to receive heavy aircraft. The first is projected for completion in April 1985, and the second in February 1986. As reported in the Western press, an air squadron of Harrier vertical-takeoff aircraft, nine F-4 Phantom fighters, Hercules transport aircraft, and military helicopters are now already stationed on the islands. Buccaneer bombers are periodically based there. There are anti-aircraft missile launchers and powerful radar stations on the islands.

British naval forces patrolling in the area of the archipelago include an atomic submarine, an anti-submarine ship, and four picket ships, as well as several auxiliary vessels. The complement of the detachment changes over the course of a year.

Reports have leaked to the press on England's intentions to place nuclear weapons on the islands. Incidentally, this information is not so unbelievable. After all, a nuclear-missile submarine with Polaris missiles was sent into the South Atlantic during the conflict. Granted, a cause for their use never arose.

In short, a powerful military fortress is being created in the South Atlantic. Since the conflict was unleashed, the English have invested 2.1-billion pounds sterling in military preparations on the Falkland (Malvinas) Islands.

One asks, why is all this being done? In whose interest?

It does not take a great deal of effort to answer these questions. To begin with, England, as an imperialist power, aims to turn the Falkland (Malvinas) Islands into its own powerful outpost in this region. Therefore it flatly rejects Argentinian initiatives for a peaceful resolution of the disputed issues. Thus, the 2-day negotiations in July of this year in Berne (Switzerland) between Argentina and Great Britain failed because of the obstructionist position of the British representatives.

It is not difficult to notice something else. In constructing a large military base in the South Atlantic, Great Britain in reality only plays the part of a contractor. The real client is the aggressive NATO bloc, and in the forefront the United States.

Washington has long been occupied with plans to scrape together a new aggressive bloc in the South Atlantic consisting of the United States, Great Britain, Chile, and South Africa. Military installations in Punta Arenas, and on Cape Horn (Chile), on the British-held Ascension, Tristan da Cunha, and Gough Islands and on the coast of South Africa are considered key bases of the future alliance. On attempting to include the Falkland (malvinas) Islands in their number, having turned them into the next "unsinkable aircraft carrier," is a fundamental goal of both Great Britain and the United States, and of NATO as a whole. As we see, the adventure in the South Atlantic continues.

The militaristic intrigues of the NATO militarists on the Falklands (Malvinas) Islands are creating growing alarm in international opinion. Particular apprehensions are aroused among the peoples of the Latin American region. They are concerned that imperialism will create yet another bridgehead for provocations against national liberation movements.

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